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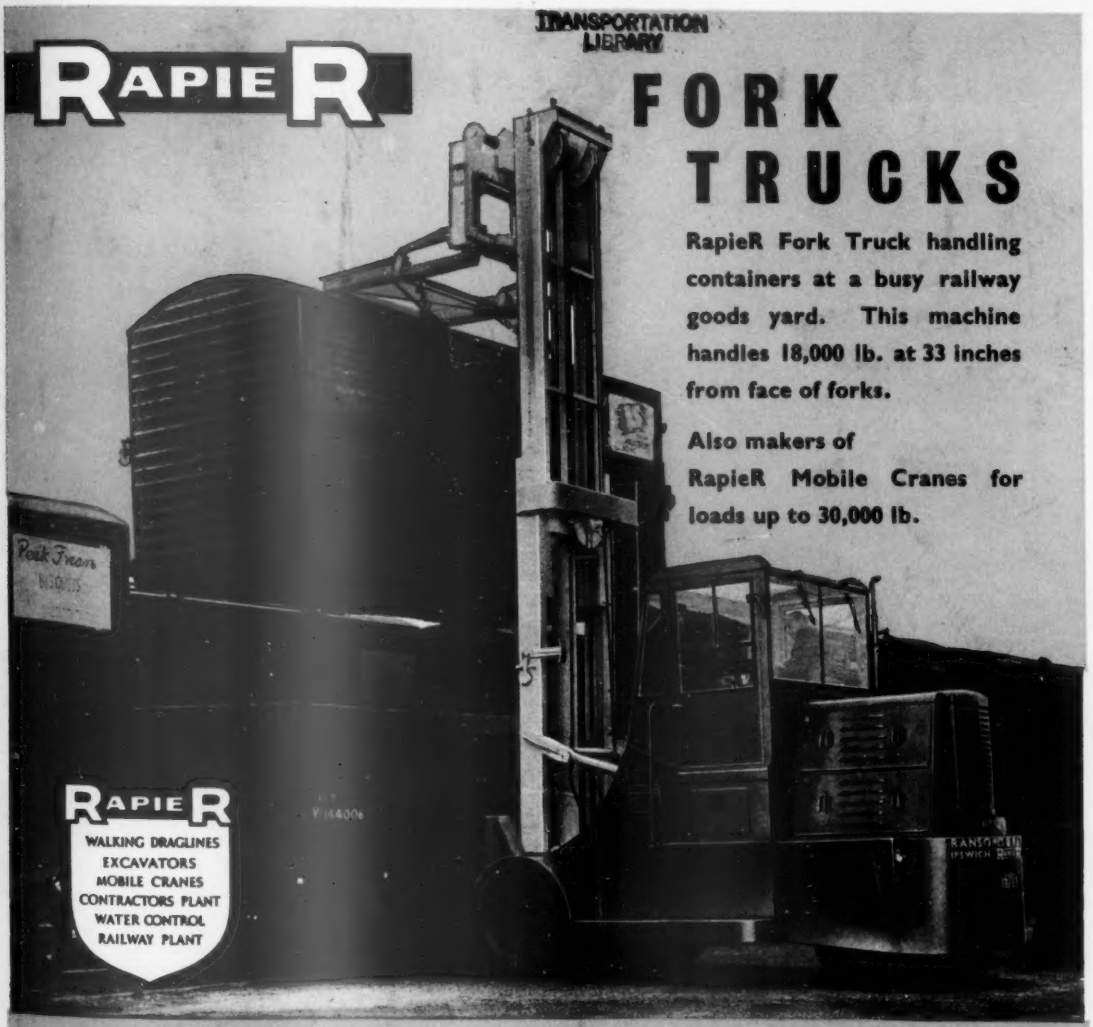

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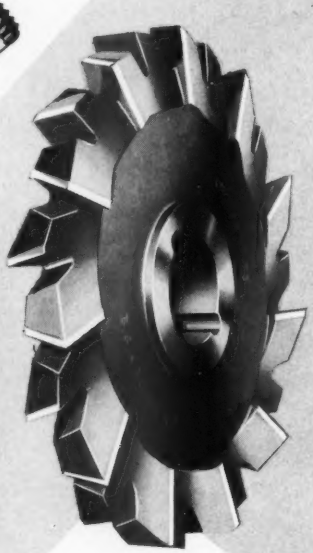

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Inter-dependence of the Railway and Iron Industries

THE importance of understanding each other's problems and of co-operation between the nationalised transport undertaking, and more particularly British Railways, and the iron and steel industries was rightly emphasised by Sir Brian Robertson, Chairman of the British Transport Commission, last Tuesday. He was speaking at the annual dinner of the Joint Iron Council at the Dorchester Hotel, London. He stressed that the railways depended much on their mineral traffic; that the present low mineral carryings were severely affecting railway revenues; and that the rates which British Railways had been allowed to charge specifically did not provide for building up reserves which would cushion them against the effects of drops in traffic. The railways and the iron and steel industry are certainly inter-dependent. The nationalised transport undertakings, if not British Railways alone, is the best customer of the iron and steel industry as users of its products on an immense scale. Minerals in recent years, and until the beginning of the current year, contributed a little less than one-sixth of railway freight revenue. They started in 1958 some 12 per cent below the previous figure, and began to fall increasingly sharply from February onwards, until, for the four-week period ended August 10, they were 24 per cent below the corresponding figure for last year. Since then they have risen slightly. They reflect the recession not only in the steel industry, but also in industry generally; indeed, mineral traffic figures are thought by a good many people to be an index of industrial activity. To what extent forwardings of raw materials and iron and steel products can be expected to increase in the near future, it is hard to say. The traffic is badly needed by the railways. There has long been a happy association between the iron and steel industry and the railways of this country, which extends to matters such as the design of ore wagons and the careful programming of mineral trains to comply with the demands of the industry. Neither can prosper without the other. As Sir Brian Robertson remarked, the difficulties of the iron and steel industry are of more recent origin, and more temporary, than those of British Railways. It is to be hoped that consignments of mineral traffic will soon return to, and exceed, their former level.

Re-appraisal of Indian Second Five-Year Plan

IN May the Planning Commission of the Government of India published its recommendations for the adjustment of expenditure under the various heads of the Second Five-Year Plan after revision of the availability of internal and external resources. As a result of discussions on these recommendations between the Planning Commission and the railway and other authorities, it has been found necessary to modify further the revised allocations. The general effect is that although the targets of production remain unchanged, the investment required to cover them is increased by about £82,500,000. The allocation for transport and communications is increased by some £6,000,000, most of which will be devoted to work in the ports of Madras and Calcutta. Little or no extra expenditure is expected to be incurred on important work stated to be already in hand: electrification between Calcutta and Durgapur, and Calcutta and Khargapur, the new line from Guna to Ujjain, the Integral Coach Factory at Perambur (Madras), and the Metre-Gauge Coach Factory at Benares. The position as to the priority of the several electrification schemes is not clear, but it does not seem that any slowing down in implementation of electrification plans is contemplated in the near future.

Indian Railways Helped by Colombo Plan

THE Colombo Plan, now in its eighth year, has greatly benefited Indian railways. For their rehabilitation they have from the first received substantial help from Canada in the form of locomotives and other equipment. From Australia also similar assistance has been in evidence, and economic relationship between these two countries has been marked. There has been no large-scale Australian capital investment in Indian industry, but private enterprise plays an important part in technical co-operation with India under the Plan, by inviting Indians to go for training in Australian shops and offices and by lending technical officers to India, also by supplying equipment. This has included 2,000 metre-gauge wagons and 24 diesel railcars, together valued at some £3,750,000. A further 12 railcars costing over £500,000 have also recently been delivered, and components for 660 wagons.

Irish Changes

ALTHOUGH the former Great Northern Railway system has now been formally integrated with Coras Iompair Eireann in the Republic and with the Ulster Transport Authority in Northern Ireland, all former G.N.R. services are reported to be operating much as before, except that engines of locomotive-hauled trains are changed at Dundalk. Working of the Dublin-Belfast main line is jointly controlled by C.I.E. and U.T.A., and G.N.R. services have been included in the C.I.E. winter timetable. Ex-G.N.R. rolling stock, which has been divided equally between U.T.A. and C.I.E., is still operating in G.N.R.

livery, with temporary markings indicating U.T.A. or C.I.E. ownership. The changes affecting the administrative staffs of C.I.E. are not as great as was expected. Some staff redundancy is unavoidable, but that so far created has been met by retiring male clerks and compensation paid from Government funds under the terms of the Transport Act, 1958. The task of C.I.E. was already formidable before absorption of part of the G.N.R.; now it is expected that it will close down uneconomic branch lines and cut out uneconomic traffic to reach economic working in the five-year period demanded by the Transport Act.

Closing a Dublin Suburban Line

THE closing from January 1, 1959, of Harcourt Street Station, Dublin, one of the termini of the former Dublin & South Eastern Railway, and of the 12-mile line thence via Foxrock and Shankhill to Bray, has long been expected. Traffic has been poor, with only 1,000 passengers a day by some 30 trains each way on weekdays, and very small movements of goods. The decision to close the line has been hastened by the provision in the recent Transport Act that Coras Iompair Eireann must be self-supporting within five years. The line was opened from Harcourt Street to Dundrum in 1854, extended to Bray in 1857, and doubled in 1862. The steam trains in recent years have been plentiful, comfortable, and punctual. No doubt the relative remoteness of Harcourt Street from business and shopping centres has been one reason for losing traffic to the roads. The Chairman of C.I.E., Dr. C. S. Andrews, has admitted that some of the travelling public will suffer inconvenience, despite the many bus services in the area; and travellers on the line have been given pamphlets explaining the necessity for closure. No doubt this is only the first of withdrawals of railway, and especially passenger, services to be expected in the near future on C.I.E.

Overseas Railway Traffics

BENGUELA Railway Company net operating receipts for the first nine months of 1958 amounted to Esc. 144,149,000 (£1,795,000) compared with Esc. 172,031,000 (£2,142,000) in the corresponding period of 1957. Both passenger and local freight traffic receipts showed an improvement on the 1957 figures, but transit freight traffic and miscellaneous receipts were down. There was also an increase in the working expenses in Africa. Railway operating revenues of the International Railways of Central America for September amounted to $955,984, a decrease of $76,101 compared with September, 1957. Net income for the month showed a loss of $133,389 ($140,812). Aggregate net revenue from railway operations for the period January 1 to September 30 was $101,382 ($1,693,924). Salvador Railway Company receipts for August amounted to colones 147,000 compared with colones 162,000 in September last year. Aggregate receipts from July 1 were colones 310,000 (colones 292,000). Costa Rica Railway receipts for September were colones 1,655,384 compared with colones 1,631,245 in September, 1957, an increase of colones 24,139. Aggregate receipts from July 1 amounted to colones 5,454,248 (colones 5,415,897).

Retired Railway Officers' Society Luncheon

THE many retired railway officers and former railway company Chairmen and the senior officers now serving on the British Transport Commission, British Railways, and London Transport who met at the May Fair Hotel, London, W., on Tuesday at the annual luncheon of the Retired Railway Officers' Society heard from Mr. Harold Watkinson, Minister of Transport & Civil Aviation, some of his views on the railway modernisation plan. Many of those now retired, who were serving during and immediately after the last war, and many officers now serving will agree with the Minister's contention that modernisation might with advantage have begun in the late 1940s. Today, in his view, the task of equipping the railways to function in the contemporary world of industry and transport is largely a matter of catching up with developments in road transport and with economic changes. He expressed his appreciation of the heaviness of the burden laid on those responsible for implementing the modernisation plan. As in previous years, the attendance was good, and the luncheon afforded further opportunities of acting on the Society's motto, which is a saying of Dr. Johnson: "A man, Sir, should keep his friendship in constant repair."

Train Accidents in 1957

THE annual report of the Chief Inspecting Officer of Railways, Brigadier C. A. Langley, published yesterday, shows that train accidents were fewer than in 1956, but the resulting casualties unusually heavy with 112 killed and 962 injured. Of the 92 passenger fatalities, however, 89 occurred in the St. Johns accident. Fatalities arising from any kind of movement on rail were 0·7 per million train-miles. Collisions and derailments attributable to want of care or irregularities of operating staff declined, and none for which signalmen were primarily responsible warranted a formal inquiry. Of the 35 accidents caused by passing signals at danger, eight might have been avoided by warning type A.T.C., of which the approved design will have been fitted on 568 route-miles by the end of 1959. This, with more colour-light signalling, should further improve matters. As, however, 55 per cent of passenger fatalities in train accidents in the last 12 years have arisen from overrunning signals and the problem of some unaccountable drivers' lapses remains, the Inspecting Officers have discussed it with the British Transport Commission, which is to undertake a special investigation with the help of scientific experts.

Limitations Imposed by Private Sidings

MANY who inspected the wagons at the recent exhibition at Battersea Wharf must have been struck by the extent to which the curvature of some private sidings restricts the wheelbases, and therefore the capacities, of wagons, and adds to the difficulties of designing automatic couplings. As more than 90 per cent of the tonnage moved by British Railways is forwarded from private sidings and from docks, and nearly 75 per cent is delivered to them, the problem is formidable. When goods are consigned in trainloads or in fairly long rakes of wagons, and limitation of wagon capacity is not required from the commercial point of view, the considerably longer wheelbase which would be possible apart from private sidings, would reduce the number of wagons and, consequently, capital costs. Dimensional limitations at collieries, staiths, and steelworks have also restricted the lengths of mineral wagons. The design of automatic couplings has been complicated by the curvature of some private sidings. This difficulty is believed, however, by Dowty Hydraulic Units Limited to have been overcome in the couplings supplied by them and now fitted experimentally to some British Railways wagons.

Expenditure on Railways and Roads

THOSE who persist in believing that too much is being spent in proportion on railway modernisation, whilst the roads are starved of capital, should consider the remarks by Mr. A. B. B. Valentine, Member of the British Transport Commission, in his Presidential address to the Railway Students' Association last week. With the railways, the £1,500 million represents expenditure on both rolling stock and track. Only about £100 million of this, he points out, relates to track and structures, and another £100 million to signalling: £7 million a year over 15 years, or £14 million including signalling. This contrasts with the minimum of £60 million a year to be spent on building and improving roads over the next few years. True comparison of the £1,500 million capital expenditure on railways with spending on road transport must include what is spent on road vehicles. Looking for

a comparison with the proposed expenditure on railway rolling stock of £900 million, Mr. Valentine estimates that in the same 15-year period, even assuming no expansion, the total spent on all road vehicles omitting private motor-cars, would be about £4,500 million.

Facts About British Railways

THE 1958 edition of "Facts and Figures about British Railways," which we have just received from the British Transport Commission, contains, as it did last year, a well-written foreword. This states very briefly the general position as to implementing the modernisation plan. A great deal of information is given, on almost every activity in 41 pages. The section on staff provides not only some useful figures, but also admirable, very brief notes on joint consultation, the Productivity Council, suggestions schemes, training and education, work study, and welfare. The total staff, excluding docks, marine, and canal staff, is given as 573,499, 75,251 fewer than in 1948, after nationalisation. Statistical information is well presented. The tables, diagrams, and graphs are clear; and there are no pictorial statistics, so much used in other publications of this kind, and so hard to read for anyone seeking information in earnest. Although the booklet is written primarily for laymen, railwaymen overseas will find useful summaries of current practice, as for instance in trackwork. Not a few railway managements would do well to publish information as clearly and concisely presented.

Timetables from the Slot

FOR some time now there have been on sale at Zurich, and certain other large stations of the Swiss Federal Railways, area and sectional timetables obtained by putting a 20-centime piece into a slot machine and drawing out a folder about 5¾ in. by 2 in., which opens out to a 16-in. by 11½-in. sheet. Against a battery of these machines is a key giving the sections and lines for which individual folders can be obtained, for example, the complete service between Zurich and Brugg, and the timetables of the Sihlbrugg, Zug, Wettingen and Esslengen lines are on one sheet. A traveller thus can get all the train information he needs at trifling cost and in convenient form, without having to buy the complete S.B.B. timetable, and with a very considerable relief in the pressure on the station enquiry office. The timetables on the sheets are replicas, with a 20 per cent linear reduction, of the tables in the complete Kursbuch and bear the same table numbers; and they bear a railway map of the whole area, with the lines concerned coloured in red. Other signs of the times on these sheets are the inclusion of a crossword puzzle, and the recouping of some of the production costs by paid advertisements along top and bottom.

Pressing on with Modernisation

THE decision of the Government that implementation of the modernisation plan for British Railways shall be accelerated will encourage railwaymen and indeed all, including all responsible people in the world of trade and industry, who are aware of the importance to the national economy of an efficient railway system. The Chancellor of the Exchequer, Mr. Heathcoat Amory, announced in the House of Commons on Monday that for 1959-60 the Government envisaged a level of public investment of from £125,000,000 to £150,000,000 higher than that of last year. The task, he stated, must be to ensure that enough resources were devoted to what might be called productive public investment needed to support expansion in electric power, railways, and roads, and "very considerable investment" would be provided for under those heads. The consequence for the railways may be judged from the statement by Mr. Harold Watkinson, Minister of Transport and Civil Aviation, when he opened the Freight Transport Exhibition at Battersea Wharf last week. He declared that because the Government realised that the difficulties caused by fall in railway freight receipts were temporary, and because it believed that efficient modern transport was one of the keys to the prosperity of this or any other industrial country, "we think that this is a time to take our courage in both hands and press forward still faster with modernisation, rather than hold it back."

This shows that the Minister has confidence in the railways, in the ability of the Commission and of the Regional managements to increase efficiency through accelerating modernisation, including, presumably, re-accelerating the implementation of those parts of the plan which were slowed down for reasons of economy. His reference to "pressing on still faster" is significant: it is not, apparently, simply a matter of continuing, but of expanding the process. It will be argued that holding back on much of the plan would be merely to abandon a costly investment; this would be the case with the very large amount of work done representing immense sums invested in electrification, and with the acquisition of diesel locomotives for complete diesel working of a line is necessary before major economies in operation can be obtained. On the other hand, Mr. Watkinson a few months ago was expressing some misgivings as to the adequacy of the efforts being made by British Railways to achieve financial equilibrium, and warned railwaymen of the necessity to make every effort to increase receipts by giving good service and by taking advantage of new freedom in charging. Now apparently he is satisfied that the railways have made a great effort, although the results are not apparent in increased freight receipts. The latter indeed have fallen to a seriously low level. He referred, last week, to this severe drop in receipts from coal class traffic and steel as a "temporary squall," which has struck the railways a severe blow, and added that it was particularly hard that this should fall at this point in time, when otherwise the Commission "would have begun to reap the financial benefits from the modernisation plan." He mentioned also the new traffic organisations in the Regions "capable at the local levels of responding quickly to the needs of industrialists and traders." He referred also to the improvement in passenger services, to what he termed the resilience of passenger revenue, and to the fact that, with the passenger business, modernisation was producing the "dividend we hoped and planned for."

The Minister is a shrewd, but constructive, critic of the railways, and doubtless feels, as many other people do, that more could be done in various ways to improve goods services and increase receipts. That he did not say so at Battersea was due no doubt to his addressing an audience of railway users apart from a desire not to criticise at a time when constructive action is necessary. He explained then that the position as to goods traffic was such that the Minister of Transport and the Commission had felt it desirable to carry out a detailed investigation into future prospects. Such an investigation is certainly desirable if only to reassess financial prospects and traffic trends. It is hard to see what more can be done as regards internal re-organisation on the railways, without further disturbance to their working; nor does any alteration of policy as to freight working seem justified, apart from such changes as may be dictated by reassessment of traffic prospects as in the different types of wagon ordered, and in the selection of depots for modernisation. The fact remains, however, that the Government recognises, with the Minister, that the present low level of railway traffic receipts is the result mainly of the present recession. The traffic simply is not there to move, and all forms of goods transport, including road hauliers, are suffering.

Transport users were urged by Mr. Watkinson to use the facilities provided by the nationalised transport undertakings, for it could be to no one's advantage if the public carriers "were given only the left-overs to carry." No undertaking, he rightly pointed out, could give a good service on that basis. We do not believe, however, that this is an argument which can properly be used in addressing transport users, who are bound to be influenced by cost, efficiency, and convenience. In this part of his speech he was careful not to specify British Railways or British Road Services, but referred to nationalised trans-

port by rail and road. At all events, transport users have been able to see at Battersea the extent to which British Railways, British Road Services, and consignors' and consignees' own transport to and from terminals can be combined in an effective whole.

Much has been accomplished in this and other ways to improve the railways' service to the public. How far further improvements can be made depends much on the amount of further investment in modernisation. Whilst there are certain physical difficulties to overcome, notably in supply of materials and manpower, the speed of implementation is governed very largely by the amount of funds made available. As the Government recognises the necessity for ensuring the efficiency of the railways, which can be achieved only with the new plant and motive power, rolling stock, and equipment provided for in the plan—besides much personal effort by railwaymen—it is to be assumed that the sums forthcoming from the Government will enable modernisation to be pressed on with as fast as physical factors allow.

Developments in Freight Transport

THE exhibition of British Railways passenger rolling stock at Battersea Wharf goods depot last year gave the public an opportunity of seeing some of the new vehicles being placed in service. The appeal of the exhibition of freight transport equipment held at Battersea over the past week-end was mainly to traders and industrialists and other users of transport on a large scale. There was emphasis on door-to-door transport, on the ease with which British Railways and British Road Services with the aid of equipment shown, can move goods by rail or road, or both, quickly and without damage. It gave to all who studied the exhibits with the help of the concise but well worded descriptive booklet and catalogue, an excellent idea not only of facilities for moving and handling freight already in use, but of some developments still in an experimental stage. The organisers deserve praise for the arrangement and display of 60-odd large exhibits in a confined space. The demonstrations in our experience were carefully planned and well executed. The only disadvantage, inevitable in the circumstances, was the participation in some cases, so as to keep the demonstration reasonably brief, of inspectors and other staff over and above the number of men who in actual practice would perform the operation concerned. Some who watched may not have realised how few men are needed for many of the loading, unloading, or transhipment operations when mechanical equipment is used.

Some of the exhibits are mentioned and illustrated elsewhere in this issue. Many of them are familiar to railwaymen; but we believe that not a few are novelties to officers of many railways overseas, even where a high level of wages has resulted in adoption of mechanical handling and even to some officers of British Railways, for such is the number and variety, more particularly of containers. What may surprise many people abroad is the immense variety of traffics moved by rail in Britain, and the multiplicity of types of wagon and container devised to handle them.

New developments in course of experimentation included the Dowty experimental automatic coupling, which was fitted to 16-ton mineral wagons and demonstrated in action, and, at the other end of the scale of simplicity, the Penman ramp for transferring containers between rail and road. As the coupling was shown on straight track, it was not possible to judge its behaviour on sharp curves, including those likely to be encountered on private sidings and some works railways. According to accounts and photographs, no difficulty has been experienced in engaging the couplers on curves. The makers' testing site includes curves of appropriate radii. How the coupling, which appears robust, will withstand long periods of service, remains to be seen. Such a device, which enables fully fitted trains to be coupled and uncoupled without the shunter having to go between wagons, can be a factor of great importance in speeding up traffic, more especially in marshalling yard working. The ingenious Penman ramp is so simple as to make more than one visitor ask why it had not been developed before—though the concept dates back a good many years. Where to use it in preference to a much more costly crane or suitably fitted fork-lift truck is a question needing careful study. The crane or truck can be used for other purposes besides transferring containers. The ideal application would be a depot where large numbers of containers are transferred daily; it is understood that container depots, dealing exclusively with container traffic, are to be built. A third new device on show was the prototype collapsible light-alloy container described in last week's issue, and destined to play an important part in developing container traffic by sea, for the economy of space achieved by folding the empty container is a matter of great importance in a ship.

The development of container traffic is likely to continue apace. The variation in sizes does not cause difficulties in transfer and where traffic flows well, the cost of returning special types empty is justified. The "freight liner" train of containers on flat wagons, running between principal centres, gives good service at low operating costs. Whilst goods train services are likely to be withdrawn in increasing numbers from unremunerative branch lines, trunk services between cities will multiply. Last year more than 700,000 loaded containers of all types were despatched by British Railways. The building of special types of wagon is more serious because of the higher capital cost. The new traffic organisations should facilitate accurate forecasts of special traffic. A notable feature at Battersea was the variety of tank wagons, some of them placed in service some years ago.

If the present recession ends soon, a good deal of potential traffic will exist for capture by railway commercial, and other staffs. British Railways and British Road Services together make the British Transport Commission the largest freight carrier in the country. Last year British Railways carried some 274 million tons, and B.R.S. over 16 million. Together, as the exhibition showed, and, as it is to be hoped, many transport users have seen for themselves, they have developed the means of moving quickly and safely almost everything that can be moved, but these material aids must be supplemented by personal effort on the part of railwaymen to ensure quick service, without loss or damage throughout the transit.

Automatic Junction Working

FROM almost the first days of the appearance of signals, on railways, as patent records testify, inventors sought to introduce some measure of automatic action into their working so as to obtain some security against what has come to be called the human element, particularly against neglect to restore a signal to danger behind a train. Many signal reversers were proposed and a few tried, besides devices for carrying out automatically the time interval, working on the principle seen in the headway recorder of today, but using more cumbersome mechanism. With so much yet to learn and indifferent facilities for maintaining anything in good order it is not surprising that failures occurred, creating a distrust of self-acting apparatus and a preference for manual operation; training and discipline were relied on to give reliable working, as in great measure they succeeded in doing.

With the adoption of the space interval, by which time scientific developments were placing new resources at the inventor's disposal, the possibility of constructing an automatic block system offered attractions; but much had to be done before anything answering adequately to the requirements of main lines, as distinct from the tramway type of traffic, was evolved. The economic and other conditions ruling in America invested working without human intervention, save in the upkeep of the apparatus, with a particular appeal. From America came eventually the normally energised track circuit, shunted by the train, the successful application of which completely changed the picture. This, with its associated equipment so ably developed and extended in the U.S.A. and Canada, includ-

ing at length adaptations to electric railways, made its way to Britain and other European countries. Combined with power interlocking apparatus it became adopted by the London Underground lines, for in no other way could the full benefits of electric working be attained.

While an almost complete safeguard against mistakes was thus provided, the working at stations and junctions still was entrusted to the judgment of the signalman. He, when traffic did not flow exactly in the order intended, became responsible for directing it to the best advantage, in consultation with a traffic controller, and aided by such devices as the magazine train describer. At busy times the work demanded incessant attention, but various improvements, ending in the use of route setting by push-button, did much to reduce the movements required. Some measure of automatic working was indeed applied years ago, at a few simple terminal layouts and, later, junctions, using time or train describer controls or both or even inductive action from the train itself, to perform operations previously had always been entrusted to a signalman.

Problems still remained to be solved, however, so as to arrive at something more generally applicable and flexible. The way in which this has been accomplished, after much thought, experiment and careful design, to meet the conditions on London Transport lines, was told in the paper read by the Signal Engineer of L.T.E., Mr. R. Dell, before the Institution of Railway Signal Engineers on October 23. On that occasion he explained the principles and working of the programme machine, which in conjunction with a time control and storage of certain messages, has met the disadvantages remaining with earlier methods. The possibilities offered by this equipment appear to be considerable and, although main line requirements generally are more varied, and perhaps in some ways more exacting, than those met with on the London Transport system, there are probably many locations where such working could be used to advantage; investigation might show the problem easier of solution than at first sight might appear. Members of the Institution are to have the advantage of seeing programme machines in operation on November 29.

Ceylon Government Railway in 1957

MR. B. D. RAMPALA, General Manager of the Ceylon Government Railway, has sent us a copy of his administration report for the year ended December 31, 1957. It should be noted, however, that the accounts and statistics included in it refer to the financial year ended September 30, 1957. For the first time during the past 20 years revenue exceeded Rs. 80,000,000, to be exact it was Rs. 81,121,902, an increase of Rs. 3,161,965 over that for the previous year. The corresponding figure for working expenses also rose by Rs. 7,548,624 to Rs. 96.222,924, so that the year's operating loss was Rs. 15,101,022. The increased expenditure was due to enhanced cost of coal, diesel oil, steel and other materials, as well as higher salaries and wages. Fuel and coal alone cost Rs. 4,400,000 more. Some of the more important results of the year's working as compared with those for 1955-56 were as follows:—

	1955–56	1956–57
	(Thousands)	
Passenger journeys	52,363	53,836
Goods ton-mileage	187,647	195,265
Passenger train-miles	4,591	5,003
Goods train-miles	2,029	1,967
	(Rs. thousands)	
Passenger receipts	30,372	31,744
Railcar	257	255
Parcel & mail receipts	4,980	4,737
Goods & livestock receipts	38,478	41,054
Total revenue	77,960	81,122
Working expenses	88,674	96,223
Deficit	10,714	24,924*

* Including Rs. 9,823 interest and annuity payable.

Among the modernisation improvements undertaken were: the relaying of the Batticaloa-Trincomalee light railway with heavy rails, the strengthening of the Coast line, and the enlargement of at least one station. Improvements in Colombo and other suburban services had to be postponed because rolling stock, locomotives, and other equipment had not been delivered. Moreover, installation of colour-light signalling was delayed as tenders received did not reach the standard required, and fresh ones had to be invited. The report of a Japanese consultant on the design and building of coaching stock suitable for local climatic conditions was awaited.

The widespread heavy flood damage, already described in detail in our pages, caused 740 out of the 900 miles of line to be unsafe for traffic. The cost of restoration to pre-flood standards was estimated at over Rs. 25,000,000 and consequential loss of earnings at about Rs. 2,000,000. Three years were expected to be required to restore the track to its former condition. Meanwhile, the schemes proposed by the United Kingdom Railway Commission were being implemented. Also a grant in aid of $4,700,000 by the United States Government had enabled 25 diesel-powered coaches for suburban traffic to be ordered.

The route-mileage remained at 898 miles, of which 811 were of 5-ft. 6-in. and 87 (the Kelani Valley line) 2-ft. 6-in. gauge; 63 miles of 5-ft. 6-in. gauge were double line. Three "M2A" class broad gauge diesel-electric locomotives, five third-class 55-ft. coaches, 13 bogie low-sided and two bogie tank-wagons were placed in service during the year under review. On December 31, 1957, there were 225 steam and 51 diesel locomotives in commission as well as 23 diesel-electric railcars.

In spite of increasing road competition railway earnings increased from all main types of traffic. Train-mileage was 5 per cent higher. Improved turn-round of wagons resulted in a much larger tonnage of goods being moved with the same number of wagons as in the previous year. Two more powerful diesel locomotives—a further gift from the Government of Canada and making 10 in all—were expected to be delivered in April, 1958, when also delivery of the 15 diesel power-coaches on order was expected to begin. Once this additional stock was available it was expected that Colombo suburban congestion during peak hours would be reduced.

Accidents on Indian Railways

(By a correspondent)

THE review on railway accidents issued recently by the Indian Railway Board is both opportune and informative. Accidents have occurred in fairly quick succession over the past three years, and much public concern has been expressed in Parliament and the Press. The review explains how railway accidents take place, and what steps are taken to prevent these. The peak figure since 1947 is 24,120 accidents of all kinds, in 1948-49. This has been reduced steadily to 9,011 in 1957-58, including 17 major accidents inquired into by the Government Inspectors of Railways.

The review explains that the term "accident" is used in a comprehensive sense and the figure 9,011 in 1957-58 included 1,661 cases of trains running over cattle (18·4 per cent), 4,825 cases of failure of engines, rolling stock and permanent way (53·5 per cent) and collisions, derailments, fires in trains and stations, accidents at level-crossings, and so on. It is pointed out that the incidence of accidents bears a distinct relationship to the total volume of traffic handled by passenger trains. For every 100 million train-miles operated, there were 31 collisions and 189 derailments in 1948-49. Corresponding figures for 1956-57 were 11 collisions and 91 derailments, and for 1957-58, 14 collisions and 92 derailments. For casualties, 1948-49 also was the peak year, when there were 102 casualties for every 100 million passengers carried. The corresponding figures were 21 in 1955-56, 45 in 1956-57, and 42 in 1957-58. Traffic on Indian railways has risen rapidly since Partition in 1947. They carry 3·8 million passengers daily, or 1 per cent of the population, and 360,000 tons of freight a day in 23,000 wagons.

Comparisons are made in the review with the railways of other countries to show that operation in India is not

fraught with greater risk than on large railway systems elsewhere. A warning is given that the comparative statistics for foreign railways should be taken only as a rough guide, as conditions differ widely, notably in the mileage of single line, unfenced track, liability to sudden floods and washaways, and density of traffic. The latest comprehensive figures for Indian, British, and U.S.A. railways are available for 1955-56. On the Indian railways, for every 100 million train-miles operated, there were 36 collisions, 11 of them involving passenger trains. On British Railways, during the calendar year 1955, there were 98 collisions, 18 of them involving passenger trains. The total number of collisions on the U.S.A. railways was 289; separate figures for passenger trains are not available. Between the three countries, the number of collisions is the smallest on the Indian railways in relation to the volume of traffic.

In regard to derailments, the position in India compares unfavourably with Britain, and favourably with the U.S.A. In 1955-56 there were 522 derailments in India for every 100 million train-miles operated; 92 of these involved passenger trains. The total number of derailments in the U.K. in 1955 was 51, including 12 passenger trains. In the U.S.A. it was 627. In a rough comparison of passenger casualties in train accidents the comment is made that in India during 1956-57, for every 1,000 million passengers carried, seven were killed and eight injured. In the U.S.A., in 1956, the corresponding numbers were 1·6 and 36. In Britain, no passenger was killed in that year.

In an analysis of the causes of 277 " serious accidents " on the Indian railways since 1941-42, it is stated that 41·8 per cent of the accidents were caused by the failure of railway staff. Other major causes were the failure of rolling stock and permanent way 19·8 per cent; train wrecking 11·2 per cent; and fires 10·5 per cent. The pattern of causes of accidents is roughly the same on the British Railways. There, in 1956, 52.2 per cent of the accidents were due to the failure of the human element, 10·1 per cent to technical defects, 1·8 per cent to snow, landslides and floods, 6·3 per cent to animals on railway lines, 21·6 per cent to misconduct of the public, and 8 per cent due to miscellaneous causes.

One step taken by the Indian Railway Board and the managements of the railways to reduce the number of accidents is a general tightening-up of supervision in the civil and mechanical engineering and operating departments, including greater vigilance with regard to floods and washaways. Research units have been set up on each of the eight railways for analysing various categories of accidents to determine the factors more commonly responsible for them, so that appropriate remedial action can be planned. Special safety organisations also are stated to be in operation in railway headquarters, and divisional and district offices, also in workshops. Their duties include intensive outdoor inspection and action necessary to remedy any defect that may be noticed.

In regard to improvements to signalling and interlocking, the review states that during the last 10 years 399 non-interlocked stations have been interlocked, the lock-and-block system has been installed at more than 219 stations, 307 stations have been equipped with " token " instruments, and platform lines at 56 stations have been track-circuited.

LETTERS TO THE EDITOR

(The Editor is not responsible for opinions of Correspondents)

Design of Diesel Locomotives

October 21

SIR,—The problem posed in your editorial note of October 17 has a simple answer: to build the 1,700-b.h.p. locomotives as of 72-ton B-B axle notation, and to provide each one with a brake tender. This could merely be a four-wheeled truck (later useful as such) with roller bearings, and air as well as vacuum brakes, ballasted to 36 tons.

At speeds safe for unfitted loose-coupled trains, to avoid shunting, it would be safe to push the brake truck in front of the locomotive in one direction, if that should ever be necesary.

Yours faithfully,

JOHN RODGERS

132, Worrin Road, Shenfield, Essex

October 26

SIR,—As no official reply seems to have been received to your editorial comments on the low power-weight ratios of most main-line diesel locomotives now being introduced on British Railways, one assumes that British Railways' views support what is being carried out in practice, with one or two notable exceptions: i.e. weight is unimportant. Does this indicate short-sightedness in the overall policy of British Railways since the last world war and nationalisation?

With nationalisation came standardisation. One wonders whether the increase in efficiency, if any, brought about by the introduction of less than 1,000 standard steam locomotives in a total of 17,500 steam locomotives in use, can balance the cost of the design and development of the dozen new types of these standard locomotives besides the cost of disruption of tradition amongst railwaymen, whether engaged on production, maintenance, or operation. Perhaps the greater portion of the money expended on steam during the last 10 years could have been put to better use in further research into, and development of diesel and electric traction for the more distant future. The steam locomotives built in the period since nationalisation could have then been based, in the main, on proved types of the previous railway companies.

Since the decision to replace steam with diesel and electric traction, the aim of standardisation seems to have been lost amongst the many different types of diesel multiple-unit trains and locomotives, many of which are designed for similar tasks. Important factors in designing for production and maintenance, namely standardisation, simplification, and specialisation, have been thrown overboard except in certain cases where they are retained apparently to restrain progress.

As to weight: in other forms of transport the ratio of tare weight to payload is considered so important that wide use is made of light alloys and of integral and stressed skin designs. British Railways seem unwilling to use such methods of construction. Yet the express train carriage, with a minimum of door openings, presents an ideal opportunity for efficient design. Perhaps the additional design problems set by the reduction of tare weight, e.g. suspension, are too frightening.

In 1956, it was decided to adopt the vacuum brake as standard for express freight trains and vehicles. A century ago, in the battle of broad against the narrow gauge, the deciding factor was probably not whether one system was better than the other, but which system was more widely used at the time. Can the same be said for the more recent vacuum brake decision? The vacuum brake is very convenient when using steam as motive power, but it is sluggish in operation and heavy in weight. With the change of motive power to diesel and ultimately to electric, the lighter air brake seems more satisfactory. This is shown by its widespread use abroad and in this country, as by London Transport Underground. How strange that some main-line diesel locomotives should have vacuum-controlled air-operated brakes, and that diesel multiple-unit railcars have air operated gearbox change mechanisms but vacuum brakes.

Yours faithfully,

T. E. SCOTT

c/o 121, Goddard Avenue, Swindon

THE SCRAP HEAP

Honourable Gesture

A woman traveller who reported to the Stationmaster at Euston that she had been defrauded by a member of the staff has been reimbursed by the porters, who made a collection among themselves. The passenger had sought out the Stationmaster just before her train left for North Wales and complained that a porter to whom she had entrusted a £1 note to get change for his tip had disappeared. The porters also asked that a letter be sent regretting that such a thing should happen at their station.

Flowers at Euston

Letters of appreciation are being received by the London Midland Region from passengers who enjoyed seeing the beds of geraniums near the line outside Euston Station. They were planted by the Civil Engineering Department north of the new signalbox and round the Yardmaster's office. In spring the beds are planted with tulips and in winter with wallflowers. One letter expressed thanks to the staff "who took the time and trouble to plant geraniums in such sombre surroundings. They added a note of brightness and gaiety."

Traffic Pooling in the U.S.A.

The United States Supreme Court has decided against the legality of the Joint Traffic Association, which was formed in 1895 by 31 railways, representing the great trunk lines and their network of branches, for the purpose of maintaining reasonable and just rates, fares, rules and regulations on State and Inter-State traffic. The lower Courts had decided against the Government, whose main contention was that the agreement was a combination to prevent competition, thus constituting a contract in restraint of trade and commerce.—*From "The Financial Times" of October* 25, 1898.

[Section 5 of the Interstate Commerce Act of 1887 had declared that traffic pooling between competitive carriers was illegal, and the Joint Traffic Association, which came into force on January 1, 1896, was a device of the principal railway companies to fix rates and apportion traffics without technical pooling. In the adverse decision given by the Supreme Court 60 years ago it was held that the arrangement was a combination in restraint of trade in contravention of the Anti-Trust Act of July 2, 1890.—ED., *R.G.*]

Derailed by Trapped Kitten

The engine of a goods train was derailed at Llanrwst station, Denbighshire, on the Llandudno Junction to Ffestiniog branch of the London Midland Region, by a kitten trapped in the points. Nobody was hurt, but the kitten was killed. The single-line track was blocked for four hours.

Coals to Newcastle?

Nearly 4,500,000 bottles of South African wine have during the last two months been exported to France from Cape Town. The wine was taken in railway tank wagons and shipped to France in tankers. The wine came mainly from the Huguenot, Klapmuts, Koelenhof, Tulbagh and Franschhoek areas and about half the consignments were conveyed by railway tank wagon trains and 600-gal. tanks mounted on railway road transport vehicles, while the exporters used their own transport to convey the balance of the consignments to the docks.—*From the "South African Railway News."*

Semi-Fast

Thoughtful persons will repress the impulse to suggest with a sneer that a train described as semi-fast might just as well be described as semi-slow. This is barely specious. Semi-precious stones are far from being semi-worthless. A demi-mondaine is not the same as a semi-bumpkin, a demigod is not a demi-devil, semicircular does not mean half square. . . . Although there is a becoming air of humility about the designation "semi-fast," and although we cannot know whether it means promotion for the tortoise or relegation for the hare, it is difficult not to feel that some more appropriate epithet might have been chosen. Perhaps "quasi-fast" might have been better, or "medium pace." We do not, after all, wish lightly to imperil our reputation as understatement-addicts. — *From "The Times."*

The End of the Line

(*October* 1, 1958. *By a member of the G.N.R. Dublin headquarters staff*)

The reason we're gathered there's no need to tell.
It's that all of us might bid a last fond farewell,
To "the railway" we've worked for this many a year,
And though in the midst of laughter and cheer,
Good fellowship, merriment, dancing and wine,
We know that to-night it's the "End of the Line."

* * *

I'm not suggesting things won't be the same,
They might be—but under a different name.
We'll pretend to ourselves that it's just as before,
Though the crest will no longer be over the door—
The bold coat of arms that depicted our rail,
Replaced by a kind of surrealist snail*.
The immediate future may not seem too bright,
But I'm sure in my heart things will all turn out right,
Though they never can be as they have been before,
Alphabetically speaking there'll be no "G.N.R."
And if tears dim your eyes, well they also dim mine,
For it's sad to be seeing the "End of the Line."

* The winged wheel emblem of Coras Iompair Eireann, which has taken over the G.N.R. lines in the Republic

Postwar Bridge Reconstruction in Germany

Photo] [*K. Westcott Jones*

Hamburg-Cologne express entering the restored Elbe bridge between Hamburg Hauptbahnof and Harburg. Note new coaching stock

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

INDIA

Brahmaputra Bridge

Preliminary works such as the location survey for the Brahmaputra bridge between Pandu and Amingaon, in Assam, on the North East Frontier Railway, its approaches, yards and other ancillary works for clearing the site are progressing satisfactorily. Work on the foundations is scheduled to start in the coming working season.

Productivity Drive

Scientific incentive schemes to raise productivity are to be introduced in most of the Indian railway workshops by the end of the second Five-Year Plan period, and for this purpose production control organisations are being set up on several railways. In the Railway Board office in New Delhi a Production Directorate is being set up, to direct and co-ordinate the productivity drive.

Sealdah Yard Remodelling

Work has recently been completed on the remodelling of Sealdah passenger terminus and yard. It is now possible to run eight additional up and down trains between Sealdah North and Main to Duttapukur on the Bongaon section and Titaghur and Barrackpore on the main line. Alterations to the layout and signalling have converted one of the two goods lines for passenger working, giving three tracks for passenger trains between Sealdah and Kakurgachi.

PAKISTAN

New Rolling Stock

Over the last few months the North Western Railway has been taking delivery of many new passenger coaches of a variety of types, one of which is shown in the accompanying illustration, forming part of the large order placed with Linke-Hofmann-Busch in 1957. During the course of this year another large order has been placed with the same builder for a total of 230 bogie passenger coaches of some 25 different types and interior arrangements, and including dining and air-conditioned coaches. Of this order some coaches are for the metre-gauge Eastern Bengal Railway, and the remainder for the broad-gauge North Western Railway.

NEW ZEALAND

Relay Interlocking at Christchurch

Relay interlocking, using a panel operated on the "entrance and exit" principle, is to be applied in connection with the re-signalling of Christchurch station and will enable the whole of the working to be dealt with by one signalman. There is, it is stated, no station in the country large enough to need more than one signalman on duty at a time if relay interlocking apparatus based on these principles were to be applied.

CANADA

Cafeteria Cars

A new cafeteria car was recently put into service by Canadian National Railways on its Montreal-Toronto run. The cafeteria car features low price meals and fast service. Three of these cars, smaller in size, are in service between Montreal and Halifax.

The larger cafeteria car has a seating capacity for 32 passengers and is the first of five which are to be put into service. It is being used on the morning trains leaving Montreal and Toronto for a period of four to six weeks, alternating with the present dinette car. Later it will operate in Western Ontario to test customer reaction there.

UNITED STATES

Cheaper Train Meals

A new type of meal service is being tried by the Southern Railway on its "Kansas City-Florida Special" between Atlanta and Birmingham; the same dinette-coach serves the train in both directions, southbound from Atlanta at 7.30 a.m. and northbound from Birmingham at 4.40 p.m., on a 4¼-hr. journey each way. One end of the 85-ft. vehicle contains seating accommodation for 24 diners and lounge space, and the other end the small kitchen.

While the kitchen has a four-burner gas hot-plate, its principal feature is the radiant quartz macro-wave reconstituter for serving pre-frozen meals at normal heat. This uses extremely long rays at the infra-red end of the spectrum, controlled by the quartz crystals, which filter out harmful ultra-violet and gamma rays, while passing and intensifying the infra-red rays. These penetrate the food thoroughly, and in 12 min. enable meals to be heated from their frozen condition ready for serving with a normal and appetising appearance.

Long Island Freight Traffic

In order to reduce its almost exclusive reliance on passenger business for its revenue, the Long Island Railroad has cut its carriage rates for potatoes from an average of $93.60 a bogie wagon-load to a flat rate of $50, in order to win back traffic from the roads. The reduction is to remain in force experimentally for three months, and is subject to approval by the Public Service Commission.

BRAZIL

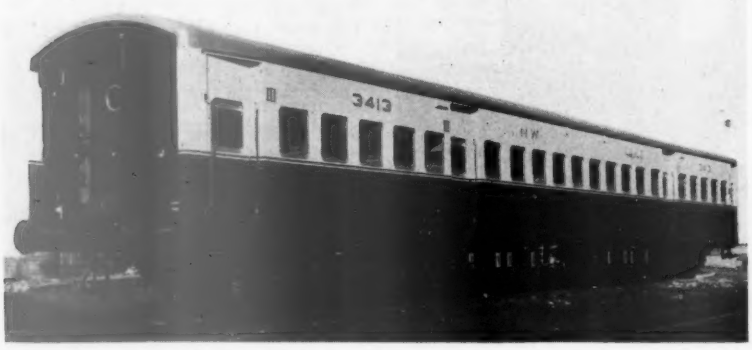
Track Maintenance

Maintenance of permanent way, buildings, and installations will cost Rede Ferroviaria Federal 3,807 million cruzeiros this year, equivalent to 22·5 per cent of total working expenses. Maintenance staff is costing 96,000 cruzeiros a mile.

During the next three or four years the following materials will be needed for 10,000 miles of line: rails, 500,000 tons; sleepers, 14,000,000; stone ballast, 10·5 million cu. metres. The quarries installed by R.F.F. this year are providing 60,000 cu. m. of crushed stone a month and 46 others, now being equipped, will supply 189,000. Compressors and generator groups are to be imported on account of the Eximbank loan, but other equipment will be purchased locally.

Claim Against Leopoldina Railway

The Supreme Federal Court has upheld the Leopoldina Railway appeal against a decision of the High Court of Labour. The latter had approved the claim of 614 employees to the benefits of a law of 1952, which would, in the words of the Judge, "have involved an astronomical increase in the wages bill, raising it to four times the gross receipts, without counting back payments of more than 2,000 million



Third class broad-gauge coach for N.W.R., Pakistan, on standard-gauge bogies for transport to port of shipment

cruzeiros." Gross receipts are at present 630 million cruzeiros a year.

R.F.F. has recently revealed that 78·47 per cent of the Leopoldina Railway expenditure in 1957 was in respect of staff. The corresponding percentage for the Parana-Sta. Catarina Railway was 76·32 and that for the Central of Brazil, 75·60. Wages cost the 18 incorporated railways 11,607 million cruzeiros, out of a total expenditure of 16,800 million.

The Central of Brazil accounted for 29 per cent of the combined deficit of the incorporated railways in 1957; the Leopoldina for 18; Rede Mineira, 12; R.F. do Nordeste, 8·2; the Noroeste, 7·9; the Parana-Sta. Catarina, 5·6; the Leste Brasileira, 5·5; Seara, 2·26; the Santos-Jundiai, 1·86; and other railways, 7·78 per cent.

SWITZERLAND

Zürich Suburban Service

The Federal Railways propose to introduce a shuttle service with fixed 30-min. intervals between trains on the suburban line between Zürich main station and Rapperswil (22 route-miles) along the northern shore of Lake Zürich. This line, on which there are 14 intermediate stations, serves a densely populated residential area in the north-eastern surroundings of Zürich. Before the intended modification of the services a few more stations and halts are to be built on the line; in addition, two existing stations are to be provided with island platforms. All level crossings will be abolished successively.

Total expenditure in connection with this work has been put at fr.25,000,000, while the purchase of 16 diesel railcars for the new services is to cost a further fr.35,000,000. The Canton of Zürich and the interested municipalities are expected to make an adequate contribution towards this expenditure.

Unexplained Subsidence on Main Line

A heavy subsidence occurred on the Zürich-St. Gall main line on October 10. Both tracks were cut between Sirnach, 20 miles west of St. Gall, and Eschlikon, two miles west. The reason is not known. Working one track was restored next day. Geological investigations are being carried out along the whole section concerned. It was not known recently when double-track working would be resumed.

FRANCE

Station Reconstruction in the North

In 1954, plans were drawn up for the reconstruction of the passenger buildings at 32 stations in the Northern Region of the S.N.C.F. These buildings had only been given emergency repairs after war damage. Since then work has been put in hand on 17 stations and completed at all but three. For the purposes of reconstruction the stations have been divided into "important" and "small." Of the 14 where work has been completed, seven, including Calais Maritime and Amiens, are classified "important" and seven "small." For five of the latter category a standard design was evolved. This was on the basis of a two-floor rectangular building 40 ft. 6 in. by 27 ft. 3 in. On the ground floor are a waiting hall with booking facilities, central office, left-luggage office, stationmaster's office, lamp room and toilet facilities; on the upper floor is living accommodation for the station master and his deputy. The design permitted the addition of special facilities, such as a goods shed, when required.

ITALY

Closing of Lines in Sicily

Because of road competition, two narrow-gauge branches of the State Railways in southern Sicily are to be closed. One connects the port of Licata via Margonia with Agrigento in the west, 53 miles, the other bifurcates from Margonia, 30 miles from Licata, and ends at Canicatti, eight miles further north. Train services are to be replaced by road transport operated by the road transport undertaking of the Regional Government.

JUGOSLAVIA

More Diesel Railcars

Five sets of diesel railcars built for the Yugoslav Railways by Ganz Locomotive & Engineering Works, Budapest, were delivered in the second fortnight of October, and have been placed in service on the main lines between Belgrade, 345 miles; Sarajevo via Ljubljana, 345 miles; Sarajevo via Vrpolje, 279 miles; and Novi Sad, 48 miles. Each train can accommodate 380 passengers, and includes a buffet compartment. The maximum speed of these trains is 77 m.p.h.

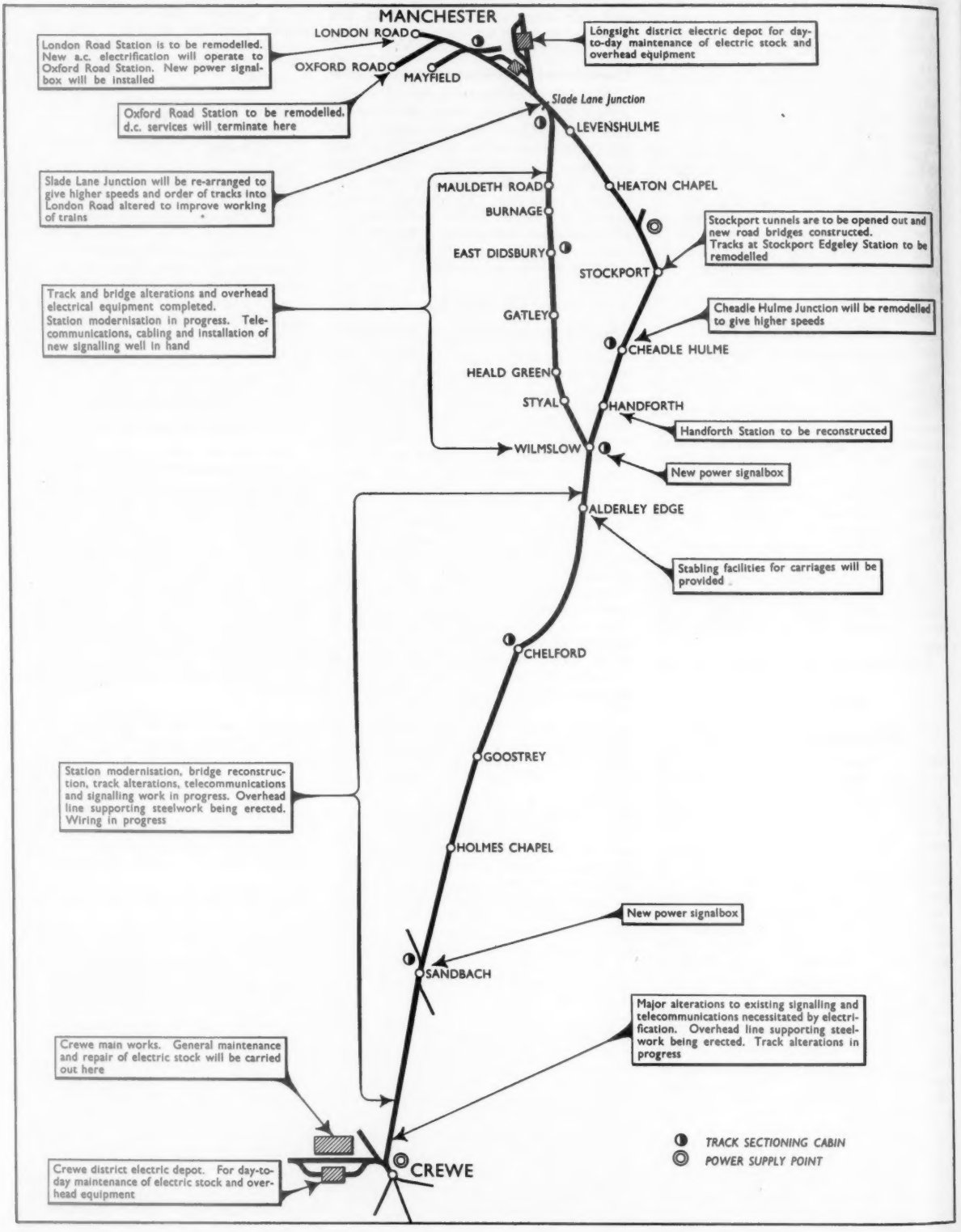
Publications Received

S.E.A.G. Papers (*English edition*).—To mark the jubilee of S.E.A.G. (Rheinstahl Siegener Eisenbahnbedarf) demonstrations of and meetings on rolling stock and other goods transport were held in March last. The seven papers presented have now been translated in English and other languages and published with some useful photographic illustrations and drawings. The papers are: "Economic Potentialities of Modern Goods Traffic, with Special Reference to Mechanical Handling in Loading and Unloading," by Dipl.-Ing. F. Brill, Managing Director, S.E.A.G.; "Problems and Limitations in the Use of Modern Goods Wagons," by Dr.-Ing. K. Raab, Head of Freight Wagon Design and Construction, German Federal Railway, Central Office, Minden; "Lightweight Construction of Goods Wagons," by Dipl.-Ing. F. Tittelbach, Chief Designer, S.E.A.G.; "Possibilities of Technical Co-ordination between Rail and Road," by Dr.-Ing. G. Wiens, Head of the Carriage & Wagon Division, German Federal Railway Headquarters, Frankfort; "Transport of Heavy Loads Formerly and Now, with Special Reference to Door-to-Door Traffic," by Hofrat Dipl.-Ing. G. Mravlag, Chief of the Road Transport Department, Austrian Federal Railways; "Use of Hydraulic Power Transmission on Railway and Road Vehicles," by Ob.-Ing K. Trümper, Chief of the Development Department, S.E.A.G.; and "Guiding on the Track, and the Small Wheel," by Dipl.-Ing. F. Tittelbach, Chief Designer, S.E.A.G. There are detailed descriptions of rolling stock placed recently in Germany and elsewhere in Europe. All railway officers concerned with goods traffic will find this series of papers of absorbing interest. It may be obtained on application to S.E.A.G., Dreis-Tiefenbach, Kreis Siegen, Westphalia.

Facts and Figures About British Railways. London: The British Transport Commission, 222, Marylebone Road, N.W.1. 6¼ in. × 4 in. 41 pp. Paper covers. Illustrated. Obtainable free on application.—This admirably concise but comprehensive booklet gives some of British Railways working results for 1957, and other statistical information grouped under passenger services, hotels and catering, Pullman car services, freight services, methods of traction, ships and ferries, permanent way, signalling and telecommunications, and staff. At the end are a summary of statistics and a list of principal British Railways offices in the U.K. and overseas. The statistical graphs are well chosen and clearly printed. Various new developments are illustrated by line drawings, which are not captioned; in view of space limitations they might have been omitted in favour of letterpress or graphs.

Winter Sunshine.—An immense variety of scene is embraced in the 96-page illustrated programme of winter holidays issued by Thos. Cook & Son Ltd. and Dean & Dawson Limited. Besides the more familiar winter resorts in the South of France, Italy, Portugal, Spain, Switzerland and Dalmatia, holidays are listed in regions as distant and diverse as the West Indies; South America; Canada and the U.S.A.; Australia; New Zealand; India; Ceylon; North, South, East, West, and Central Africa; and Israel, Turkey, and Greece. Holidays in the more distant places have been made practical by air travel from and to the U.K. Provision is made for some travel by train in the holiday regions; but a good many train journeys not included, such as that between Colombo and Kandy in Ceylon, and several in India, would add to the interest and pleasure of the holidays.

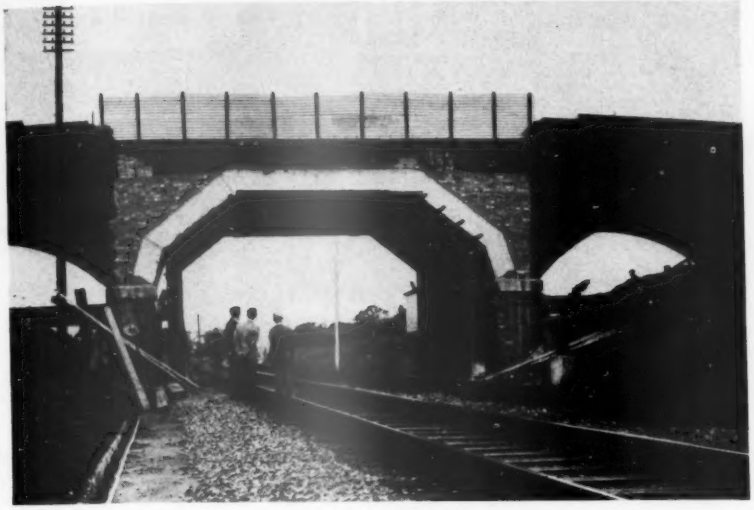
Progress of Electrification in the L.M. Region


MANCHESTER
LONDON ROAD
OXFORD ROAD
MAYFIELD
London Road Station is to be remodelled. New a.c. electrification will operate to Oxford Road Station. New power signal-box will be installed
Oxford Road Station to be remodelled. d.c. services will terminate here
Longsight district electric depot for day-to-day maintenance of electric stock and overhead equipment
Slade Lane Junction
LEVENSHULME
Slade Lane Junction will be re-arranged to give higher speeds and order of tracks into London Road altered to improve working of trains
MAULDETH ROAD
HEATON CHAPEL
BURNAGE
Stockport tunnels are to be opened out and new road bridges constructed. Tracks at Stockport Edgeley Station to be remodelled
EAST DIDSBURY
STOCKPORT
Track and bridge alterations and overhead electrical equipment completed. Station modernisation in progress. Tele-communications, cabling and installation of new signalling well in hand
GATLEY
Cheadle Hulme Junction will be remodelled to give higher speeds
CHEADLE HULME
HEALD GREEN
STYAL
HANDFORTH
Handforth Station to be reconstructed
WILMSLOW
New power signalbox
ALDERLEY EDGE
Stabling facilities for carriages will be provided
CHELFORD
GOOSTREY
Station modernisation, bridge reconstruction, track alterations, telecommunications and signalling work in progress. Overhead line supporting steelwork being erected. Wiring in progress
HOLMES CHAPEL
New power signalbox
SANDBACH
Major alterations to existing signalling and telecommunications necessitated by electrification. Overhead line supporting steelwork being erected. Track alterations in progress
Crewe main works. General maintenance and repair of electric stock will be carried out here
TRACK SECTIONING CABIN
POWER SUPPLY POINT
CREWE
Crewe district electric depot. For day-to-day maintenance of electric stock and overhead equipment

Line between Crewe and Manchester, showing location of engineering works

Progress of Electrification in the L.M. Region

Civil and electrical engineering work on the Crewe-Manchester line



Overline bridge between Crewe and Sandbach, showing steel framework supporting new reinforced concrete arch

CIVIL and electrical engineering work in preparation for the electrification at 25 kV. 50 cycles, of the Crewe-Manchester line, British Railways, London Midland Region, is making good progress. Electric working is expected to begin in September, 1960.

On the nine route-miles between Wilmslow and Slade Lane Junction, known as the Styal Line, the overhead wiring has been completed and colour-light signalling installed.

The overhead line equipment has been energised at 25 kV. and an extensive testing programme has been in progress during the last six weeks. Preparations are now being made for the training of motormen; and the first electric locomotive, the ex-Western Region Gas-Turbine locomotive 18100 has been converted into an electric locomotive and has been re-numbered E.1000. This locomotive has been delivered to the Styal Line and will be used in connection with the testing of the electric traction equipment and for the training of motormen. Elsewhere the installation of overhead equipment is making good progress, and to date some 2,600 foundations have been laid and 1,620 complete structures erected.

Catenary Construction

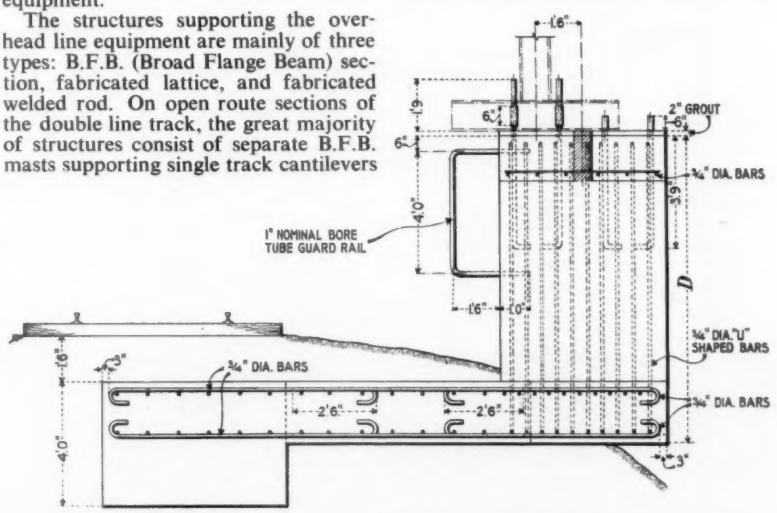
The standard catenary construction employed on the Crewe-Manchester line is of the stitched catenary type, using a 19/0·083 stranded cadmium copper catenary, and a 0·166 sq. in. single cadmium copper contact wire attached to the catenary by droppers. At each overhead supporting structure position a stitch wire approx. 60 ft. long of 7/0·083 cadmium copper stranded wire is clamped to the catenary wire and the contact wire is droppered from this stitched length of auxiliary catenary wire. This arrangement gives a more uniform level of the contact wire throughout the temperature range than is possible with the simple catenary construction which consists of only two wires, although not giving as good a performance characteristic as the compound catenary arrangement, where three wires are used throughout. The majority of the overhead equipment is of the automatic tension type, but in slow speed junction areas, fixed tension equipment is used. The automatic tensioning is applied by the use of balance weights at the ends of the overhead line equipment.

The structures supporting the overhead line equipment are mainly of three types: B.F.B. (Broad Flange Beam) section, fabricated lattice, and fabricated welded rod. On open route sections of the double line track, the great majority of structures consist of separate B.F.B. masts supporting single track cantilevers for each track. All overhead line equipment structures are galvanised.

Overlap spans and neutral sections are being provided at convenient points along the line, which is sectioned electrically, not only at the feeder stations and track sectioning cabins, but also by switches at certain strategically placed overlap spans. The 25-kV. cables from the feeder station will be laid in concrete troughing at surface level to their respective switches mounted on the neutral section structures.

Line isolating switches are fitted on the overhead line gantries at 2-3 mile intervals, and in addition to isolating sections for maintenance operations, may also be used for emergency line switching. The isolators are operated at ground level by a vertical shaft. The operating handle is padlocked against unauthorised use. At certain key points remote control switches will be motor operated from a central control point. Each isolator is comprised of one fixed post-type insulator with a pair of spring-loaded contacts in the head, one semi-rotary insulator to which is attached the copper switch arm and an earth post which is fitted with spring loaded contacts in the head.

The isolator is either operated directly by the vertical coupling tube or remotely by a push-pull arrangement. In this latter case the arm is rotated from the vertical shaft by two parallel tension tubes attached to rocking levers on the insulator and vertical shaft. This enables the switch to be positioned immediately above the supply line. The normal movement is through 90 deg. with an open position at 45 deg. When the switch is operated from the closed position, the switch arm is in contact with an earthing post attached to the gantry. On the



Section through reinforced concrete foundation for trackside structures near Elton Viaduct; the height " D " is either 5 ft. 6 in. or 9 ft. 6 in. according to requirements of site

rotary switches, the feeder cable remains stationary, current being supplied to the switch arm through leaf type phosphor bronze brushes.

For line switching the isolators are duplicated as required and the complete assembly is mounted on a fabricated steel frame which is clamped to the overhead equipment gantry.

Foundation work and erection of the supporting structures in open country are being done with auger-boring, mast-planting, and concrete-mixing units. With this equipment built up into a works train, the entire process of earth boring, mast erection, and concreting can be carried out in a continuous operation as the train passes along the track. Thus one mile of B.F.B. masts can be erected on one side of the track in a daily period of six hr.

Provision for Subsidence

Near Elton Viaduct, between Crewe and Sandbach, the ground has been seriously affected by subsidence caused by brine pumping. Between 1892-1956 this amounted to 16 ft., the yearly average fluctuating between 2 in. and 9 in. The present average is 8 in. and it is considered that the subsidence will go on indefinitely.

To counteract this downward movement special foundations have to be installed to support the trackside structures. These consist of large reinforced concrete beds below the running tracks and extending to the trackside which carry the actual foundations on which the steel masts are bolted. Fabricated lattice overhead structures which span the tracks are fitted to the masts rugby-post style to allow for adjustment after subsidence. Extra height can be obtained by fitting ferrules and extensions to the bolts on the top of the foundation. The mast can be bolted in one of two positions on the foundation to allow for lateral movement.

Power signalbox under construction at Wilmslow, showing fully glazed control room and overhead structures in the station area

At Holmes Chapel Viaduct there is not enough track-side clearance to sink the structures into the ground. The difficulty has been overcome by bolting the B.F.B. masts to the brickwork on the sides of the viaduct. The overhead equipment is then installed in the normal way.

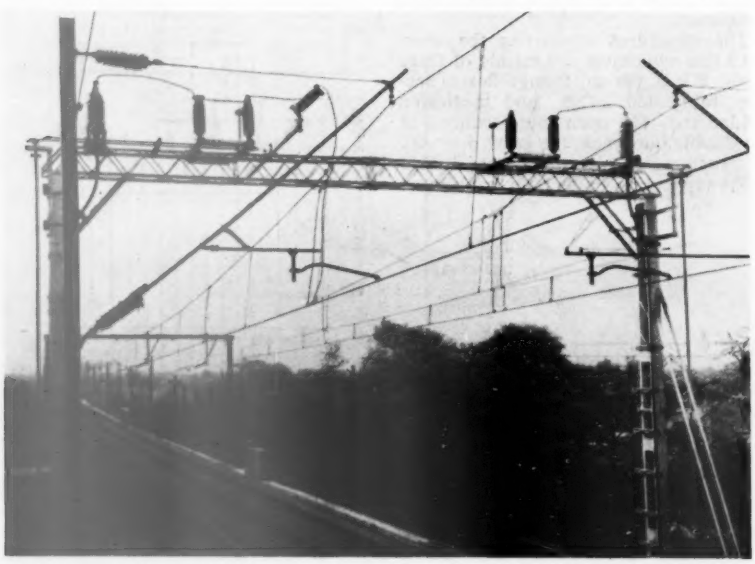
Bridge Reconstruction

To provide additional overhead clearance 88 bridges have to be altered. Of these 47 have already been completed and work is now in progress on many of the remainder.

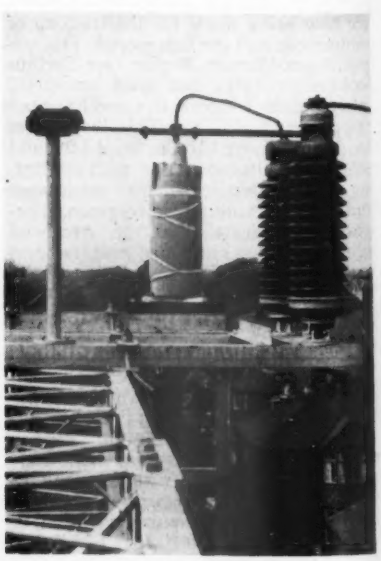
The electric services will require more room overhead because, for safety reasons, there must be an air gap between the high voltage catenary wires and the rolling stock and also between the wires and the bridge structure. At least 15 ft. 8 in. clear headroom above rail level is necessary and to achieve this clearances have had to be increased by 1 ft. 3 in. up to 2 ft.

Generally, overline bridges have been raised, but in some cases it has been possible to increase the clearances by lowering the tracks. This method has not been widely employed because undue undulation of the tracks must be avoided.

Most of the bridges needing modification are overline bridges. Several methods have been used in their reconstruction. In the case of a typical three-arch bridge with tracks running through the centre span, the



Isolating switches and 25-kV. cable sealing end mounted on the overhead line gantry at East Didsbury on the Styal Line



Rotating switch arm insulator (right) with earthing post (left)

side arches are tied temporarily to prevent their collapse on removal of the centre span. After demolition a steel framework is placed in position to support a new reinforced concrete arch during its construction. Thrust from the new arch is taken by the existing side arches. The steel supporting structure is then removed from the arch and the side tie-bars taken out.

An alternative method of arch reconstruction is for the existing span to be used to support the new reinforced concrete arch during construction; the old arch is subsequently removed. With certain girder bridges the entire superstructure is jacked up with the bridge deck intact. Afterwards the bridge abutments are built up to the new height and the approaches reformed.

Signalling

Colour-light signalling on the Styal Line has replaced mechanically-operated semaphores, and both tracks have been track-circuited throughout.

The four intermediate signalboxes at Styal, Heald Green, East Didsbury, and Mauldeth Road have been dispensed with, and the siding connections formerly worked from them are operated by electrically controlled ground frames. These connections normally are used for only short periods each day.

For control purposes this section of the line is divided into two parts. The southern half, from Wilmslow to Gatley, is under the control of the present Wilmslow signalbox; and the other is linked with Slade Lane Junction. At a later stage the control of these two sections will be taken over by the new power signalboxes at Wilmslow and Manchester London Road respectively.

To improve the working of trains on the four track sections, the lines from Slade Lane Junction to London Road are to be redesignated later this year. At present the two slow tracks are outside the two fast tracks. The slow lines will now be together on the down side. This work should be completed by the end of November.

Work on the line from Wilmslow to Slade Lane Junction via Stockport depends on the replacement of the four Edgely Tunnels, by three bridges. So far two of the tunnels have been removed and one new bridge erected.

At Crewe, where a 10-span bridge carries the Nantwich Road over several tracks and platforms, complete reconstruction is necessary to give the additional headroom required. This work is now in hand. Problems confronting the engineers on this particular job are the cramped site conditions with the station immediately adjacent to the road, and the necessity to keep both road and rail traffic going while work is in progress. The reconstruction is being carried out on half the bridge at a time so that part of the road will remain open to traffic and interference with the operation of train services minimised.

The contractors for the supply and erection of overhead line equipment are British Insulated Callender's Construction Co. Ltd., and British Insulated Callender's Cables Limited; colour-light signals track circuiting, and remote control equipment, were supplied by Westinghouse Brake & Signal Co. Ltd.; multicore cable by Crompton Parkinson Limited; the isolating switches by Bertram Thomas Limited; and feeder station equipment by Switchgear & Cowans Limited.

Hunslet Diesel Locomotives for the Scottish Region

First 204-h.p. 0-6-0 type to be delivered to the Region

THE Hunslet Engine Co. Ltd. recently commenced delivery of 12 204-h.p. 0-6-0 type diesel-mechanical locomotives on order for the Scottish Region of British Railways.

The accompanying illustration shows the first locomotive to be supplied, in service near St. Rollox, Glasgow, before being placed into regular service at its home depot. As recorded in last week's issue, two of the 12 locomotives ordered, are for use at Stranraer Motive Power Depot, and the remainder for service at Thornton Motive Power Depot. This is the first time that Hunslet locomotives of this class have been supplied for use in the Scottish Region.

Power Unit

Each of the locomotives incorporates a Gardner 8L3 diesel engine and has a weight in working order of approximately 32 ton. The Hunslet four-speed constant mesh gearbox provides speeds of 3¾, 6½, 11½ and 20 m.p.h. in either direction of travel; maximum tractive effort in low gear is 17,400 lb.

Cab fittings include two upholstered swivel seats, one on either side of the cab, an electric food warmer, two panel-type water radiators for cab heating, air operated windscreen wipers, and a large toolbox, with upholstered lid and backrest providing additional seating. Large windows give good cab visibility, and two adjustable mirrors are positioned at the rear windows to enable the driver to see the rear coupling from either driving seat. An air operated two-tone horn is fitted as a warning device.

Hunslet Engine Co. Ltd. 204-h.p. 0-6-0 type diesel locomotive at St. Rollox Works, Glasgow

Braking

The locomotives have straight air brake and screw type hand brake for locomotive braking; an exhauster and auxiliary equipment operating the braking system on vacuum braked rolling stock. A deadman control is fitted, which, in the event of incapacity of the driver, will stop the diesel engine and apply the locomotive air brake.

The principal dimensions and characteristics are as follows:—

Dia. of coupled wheels	3 ft. 9 in.
Wheelbase	9 ft. 0 in.
Height overall	11 ft. 11¼ in.
Width overall	8 ft. 3 in.
Length over buffer beams	22 ft. 6 in.
Maximum power and speed of engine	204 h.p. at 1,200 r.p.m.
Speed in first gear	3·74 m.p.h.
Speed in second gear	6·41 m.p.h.
Speed in third gear	11·56 m.p.h.
Speed in fourth gear	20 m.p.h.
Fuel capacity	350 gal.
Weight in working order	32¼ tons
Maximum axle load	10 tons 16 cwt.
Maximum tractive effort in first gear	17,400 lb.
Tractive effort in second gear	10,150 lb.
Tractive effort in third gear	5,630 lb.
Tractive effort in fourth gear	3,250 lb.
Ratio, adhesive weight : tractive effort	4·14 to 1

Freight Vehicles and Handling Equipment

Developments in British Railways and B.R.S. door-to-door and other goods transport shown at Battersea Wharf

Pipe discharge of cement from bulk-carrying wagon; compressed air is fed into valve below side frame

AN exhibition illustrating some of the vehicles, equipment, and motive power used by British Railways and British Road Services was arranged by the British Transport Commission at Battersea Wharf Goods Depot, London, S. W., and opened by Mr. Harold Watkinson, Minister of Transport & Civil Aviation, on October 30, as recorded elsewhere in this issue. It was open to representatives of trade and industry on October 30 and 31, and to the public on November 1-5. Many of the exhibits related to door-to-door transport, and some developments which are as yet experimental.

Nearly 60 main exhibits included the new Penman device for transferring containers quickly between rail and road vehicles; a prototype Dowty automatic coupler; vehicles of B.R.S. ranging from the parcels van to a rigid lorry which can carry over 16 tons, an articulated vehicle which with a payload of 15½ tons, has a maximum gross weight of 24 tons, and a model of a 24-wheel trailer designed for big loads of up to 200 tons. Also on view were a British Railways Brush 1,250 h.p. main-line diesel locomotive; a diesel shunting locomotive; a 56-ton iron-ore hopper wagon; a bulk material vehicle which is unloaded pneumatically; pallet vans; international railway transport vehicles; a car-carrier; and a wagon for transporting electric transformers weighing up to 135 tons.

Examples of almost every type of container included the prototype Tube Investments Limited collapsible container described in our October 31 issue, and types adaptable, or designed for meat and frozen foods, bicycles, bricks, and cement. Also on view were pallets, Tote bins, and collapsible metal boxes which solve the problem of packing for small articles.

Mechanical handling equipment of several types, including the British Railways Freightlifter, was demonstrated in operation and in films.

Some of the more recent exhibits are briefly described below.

Ramp for Transferring Containers

The Penman ramp, illustrated on page 572, is being used experimentally by British Railways. It consists of two raised rails with inclined sections at either end which are positioned one at each side of a siding. The containers have pull-out metal skids near each corner and, as the vehicle moves between the raised rails, the skids engage with the inclined sections at the rail ends, and the container is raised from the vehicle. A hinged flap under the container engages with a batten on the floor of the rail or road vehicle to which it is being transferred, and again by the motion of the vehicle the container is pushed along the rails and down the inclined sections, to settle gently on the lorry or rail wagon. With this system, there are few costs. The equipment is robust and the mechanics are simple. The manufacturer is A. C. Penman Limited.

The experimental automatic coupler manufactured by Dowty Hydraulic Units Limited, and illustrated on page 572, is in the later stages of testing. It incorporates the vacuum brake pipe. It will engage and lock in a wide range of track curvature and gradient conditions, while uncoupling is achieved simply by operating a lever mounted on either side of each wagon. When coupling wagons not fitted with automatic couplers, the unit can be swung through 90 deg. to present a standard draw hook. It is interchangeable with conventional draft gear without modifications to the wagon.

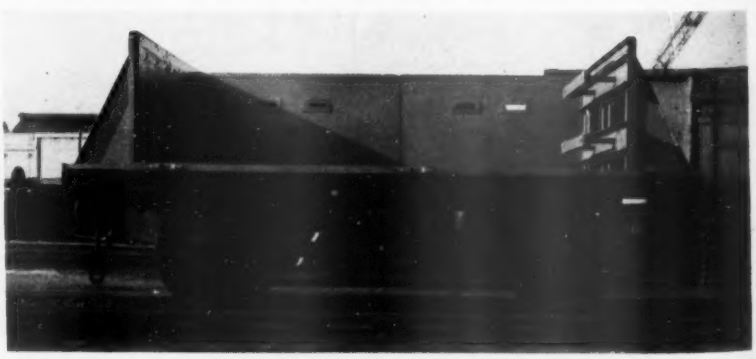
Freightlifter Fork Truck

In co-operation with Shelvoke & Drewry Limited, British Railways have developed the Freightlifter fork truck. It can lift over eight tons as a fork lift, can be converted into a mobile crane capable of lifting 6¾ tons, and, with a lifting frame, can handle containers of up to 7¼ tons in weight. It can also be converted into a searcher crane for removing articles weighing up to a ton from the corners of covered wagons. It has alternative driving positions, and can be driven on the road. Some 50 Freightlifters are now in use in British Transport freight services.

Also designed with the door-to-door transport of unit loads in mind, is the B.R.S. Tripad. A standard eight-wheel lorry has been equipped with a 24-ft. platform body made in three demountable sections. Each section is interchangeable, permitting individual sections to be lifted off and replaced by the heavy fork-lift truck, at intermediate points en route, or at terminals.

"Freight Liner" Train

Similar in concept, but planned for the express transport of containers by rail, is the "Freight Liner" train, of



Palbrick wagon with end jacks for steadying pallet loads of bricks

which two wagons with containers were shown. This is shortly to run in an entirely new experimental service. It consists of flap-top wagons permanently kept together. The rake will run to a regular timetable between main centres at high speeds. Freightlifters or cranes will remove or load containers at stopping places.

There are now over 44,000 containers in service on British Railways alone, and many more are being produced. They vary from what is virtually an open box, adaptable for the conveyance of a wide variety of goods, to specialised highly-insulated types for ice-cream and quick-frozen foods. Sizes range from the large B.R.S. container, 24 ft. long, to a British Railways small "S.W." type wheel container that can be pushed by hand. For general merchandise British Railways have over 17,000 of the "A" and "BD" types with a capacity of 329 and 724 cu. ft. respectively. Both types have end doors, while unloading or loading of the "BD" type is facilitated by side doors also. These types can be modified with internal fittings, racks, shelves, and hanging bars, and can be adapted for almost any commodity which does not require special treatment during transportation.

There are also the open types "C" and "D," and the "H" type which, with a capacity of 2¼ tons, is small enough to be craned to upper floors on building sites for unloading. The "L" type is also a small container, but of four tons capacity, with lid and bottom doors for transporting such commodities as cement, dolomite, lime, and so on. Several experimental containers made of light alloy are being tested, and one of these, designed for general purposes, weighs only one ton, but has a load capacity of five tons contained within 500 cu. ft. of space. It has other important features, including a flat top which makes it stackable for sea transport.

Pallets

British Railways have nearly 1,500 specially-built pallet vans in service and many more on order for the exclusive conveyance of palletised loads. The typical example shown at Battersea has extra wide doors for easy access by mechanical handling equipment. It was built to accommodate the most common sizes of pallets, but can be adapted for any size by removable partitions and shields which also prevent movement during the journey. There are also over 1,200 pallet brick wagons used for the conveyance of refractory bricks.

The British Railways transformer wagon exhibited was specially designed. It has 24 wheels, is 92 ft. long, and can carry electric transformers weighing up to 135 tons. The wagon is equipped with traversing mechanism which enables an exceptionally wide load to be slewed sideways to avoid obstructions. The side girders are removed to load the vehicle. The largest vehicle in the B.R.S. fleet, a 24-wheel trailer with hydraulic suspension and power steering for both bogies provided by two diesel generators, was represented only by a model because the vehicle is in great demand. The frame of the trailer can be varied in width and the main girders fixed at varying heights.

Transport of Motorcars

The railway car-carrier shown takes six medium-size motorcars, four on the top deck, and two on the bottom deck. They are positioned by a hand-operated lift, and cars can be loaded from either end up inclined ramps. The wagon is equipped with a braking system which can be operated by vacuum or compressed air so that it can be used in Britain or on the Continent. It is useful for export consignments.

The B.R.S. car-carrier vehicles exhibited were of two types. One is for delivering vehicles from the factories, and can carry four cars on two decks. The other carrier is used for car bodies; it is in fact a pallet which is loaded by fork-lift truck. These pallets were designed by B.R.S. and are used between factories in Oxford and Birmingham.

The S. & D. Freightlifter fork truck with a pallet load of car shells. Note two driving cabs and ladder for access to container roofs

Bulk Transport

One object of the exhibition was to show that the bulk-carrying capacity of British Railways and British Road Services was being continuously expanded. In a recent year British Railways produced over 33,000 all-steel 16-ton mineral wagons, 4,500 hopper wagons of 21-tons capacity, 1,300 25½-ton iron-ore hopper wagons, and 530 of 33-ton capacity. The 16-ton mineral wagon is the general wagon for bulk cargoes, but a great volume of coal and other minerals is carried daily in 21-ton hopper wagons of which there are now 36,000. There are also some 10,000 21-ton flat-bottomed mineral wagons, many of which run in block trains direct from the collieries to merchants in main industrial and residential centres. The largest hopper wagon in service is the 56-ton bogie iron vehicle. A train of nine of these vehicles can carry 500 tons and the unloading time, through power-operated doors, is less than 60 seconds for the complete train.

Amongst special wagons for commodities which require specialised equipment, a cement wagon was shown. This special 20-ton all-steel enclosed wagon which can be pressurised with air for pneumatic discharge through a flexible pipe to a road vehicle, or to a storage silo, overcomes many difficulties. It is also suitable for alumina, salt, fullers earth, powdered lime, pulverised fuel, and slate dust.

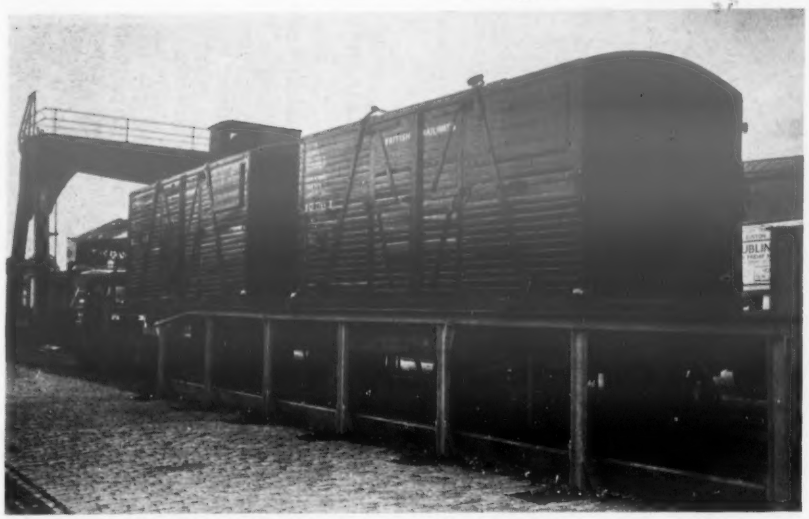
The B.R.S. bulk grain carrier consists of tractor and a "fifth-wheel" semi-trailer; its grain hopper has a capacity of 10 tons. British Railways also undertake the transport of grain in bulk, and for this purpose it has a fleet of 700 vans; they each carry 20 tons.

The exhibition also included a selection of rail and road vehicles designed for carrying liquids in bulk. There were tanks which are fixed to a railway chassis and can carry 10,000 gal. at a time; others which are demountable and can be placed on a road vehicle; and some road trailers designed to be carried piggy-back.

International Freight Traffic

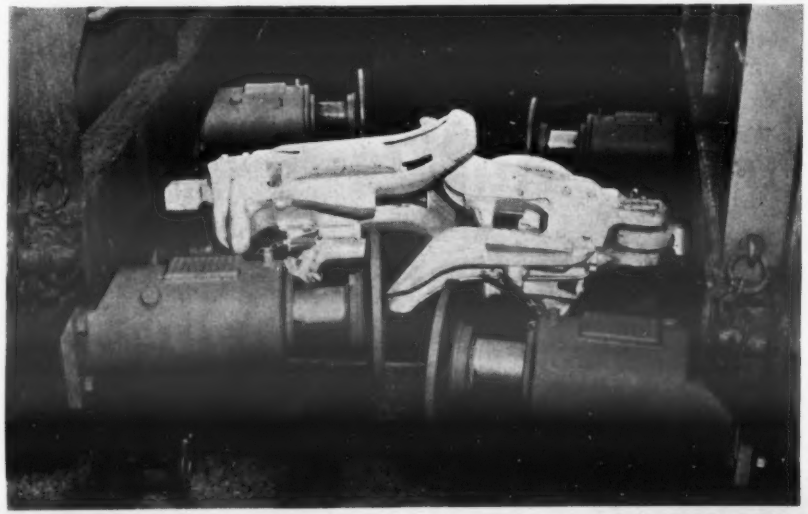
Amongst wagons shown at Battersea which are used in international traffic to and from the Continent by the train ferry services was the Interfrigo, fitted with electrical ventilation; and the Transfesa, a large-capacity wagon some 40 ft. long, is used for transporting citrus fruit and other perishables from Spain, returning with export machinery. The axles of this vehicle can be changed to enable it to travel on both the wide-gauge Spanish railways and standard-gauge lines in Europe.

Freight Vehicles and Handling Equipment

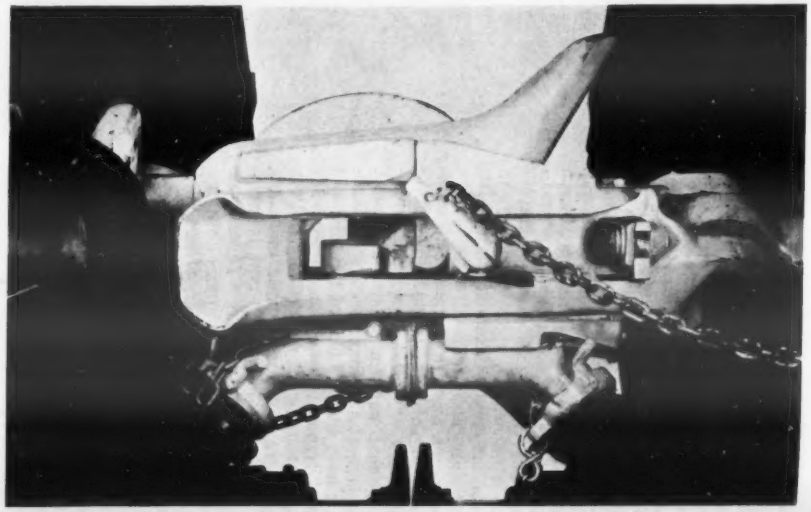


Penman transhipment ramp, showing containers lifted on ramp by dismounting tubes as wagon is shunted in

After transhipment: drawing off container, hinged flap beneath which is engaged by batten on floor of vehicle



Dowty goods wagon coupler: horns about to engage, on sharply curved track



Coupler seen from below, showing vacuum brake hose securely coupled

RAILWAY NEWS SECTION

PERSONAL

We regret to record the death on October 31, at the age of 75, of Sir William T. Halcrow, consulting civil engineer and Past President of the Institution of Civil Engineers.

Mr. Leslie Edwards, District Operating Superintendent, Bristol, Western Region, British Railways, who, as recorded in our issue of October 24, has been appointed Divisional Traffic Manager, Bristol, began his railway career at Box Station, Great Western Railway, in 1915. After serving at Bradford-on-Avon and Corsham Stations, Mr. Edwards was transferred, in 1922, to the Divisional Superintendent's Office at Bristol, where he was engaged in all phases of office duties. In 1935 he moved to the Office of the Superintendent of the Line at Paddington, to supervise the Special Traffic Section. Four years later, he was appointed Chief Clerk to the Divisional Superintendent, Chester, and in 1941 was made Assistant to the Divisional Superintendent, Bristol. In 1946, Mr. Edwards again moved to Paddington, as Operating Assistant to the Superintendent of the Line. On January 1, 1950, he returned to Bristol, as Divisional Superintendent, an appointment later redesignated District Operating Superintendent.

Mr. Leslie Edwards
Appointed Divisional Traffic Manager, Bristol, Western Region

Mr. G. A. V. Phillips
Appointed Divisional Traffic Manager, London, Western Region

In our last week's issue we stated that Mr. F. E. Cantrell will be appointed Chief Civil Engineer, Southern Region, British Railways. Mr. Cantrell's initials in fact are A. H.

Mr. G. K. B. de Graft-Johnson has been appointed Deputy General Manager, Ghana Railway & Harbours.

Mr. E. G. Moore, Assistant Public Relations Officer, Canadian Pacific Railway, London, has retired after more than 49 years' service. The following appointments in that department are announced: Mr. George Musk as Advertising Supervisor; Mr. H. H. Tiffen as Display Representative, and Mr. A. E. J. Grinyer as Press Representative.

Mr. Edmond A. Grace has been appointed Assistant General Manager, Coras Iompair Eireann.

Brigadier L. L. Cross has been appointed Public Relations Officer of the Hawker Siddeley Group.

Mr. L. J. Dunnett has been appointed a deputy secretary, Ministry of Transport & Civil Aviation. He will take charge of inland transport, in place of Mr. P. Faulkner who will take over shipping.

Mr. J. O. de M. Hopper, Overseas Representative, Expandite Limited, left this country on October 31 to visit the Continent and Middle East.

Mr. G. A. V. Phillips, M.Inst.T., Assistant (Productivity) to the Chief Commercial Manager, Western Region, British Railways, who, as recorded in our October 24 issue, has been appointed Divisional Traffic Manager, London, entered the service of the Great Western Railway in 1923. After experience at various stations in the Birmingham District, he was appointed Assistant to Goods Agent, Paddington, in 1938 and, in 1940, to a similar position with the London District Goods Manager. He became Goods Agent, Smithfield, in 1945; Assistant to District Commercial Manager, Bristol, in 1947, and, in 1953, District Commercial Manager, Shrewsbury. In 1954, Mr. Phillips was appointed District Commercial Manager, Worcester. Later that year he was seconded to the productivity drive in the Commercial Department, Paddington, and subsequently was confirmed as Assistant (Productivity) to the Chief Commercial Manager.

Mr. C. F. Huebner, Buying Controller, the British Oxygen Co. Ltd., has been elected President of the Purchasing Officers' Association.

Mr. Derek Du Pré, Joint Secretary, Institute of Cost & Works Accountants since September, 1956, has been appointed Secretary of the Institute. He succeeds Mr. Stanley J. D. Berger, who has retired as Director & Secretary.

We regret to record the death on October 17, at the age of 55, of Mr. A. E. Heimbach, President of the General Railway Signal Company of America. He has been succeeded, as President, by Mr. Percy W. Smith, Executive Vice-President. Mr. Sydney W. Freeman and Mr. John W. Porter have been elected Vice-Presidents.

Mr. R. C. Hilton, Joint District Goods Manager, Birmingham, Western and London Midland Regions, British Railways, who, as recorded in our October 24 issue has been appointed Divisional Traffic Manager, Birmingham, Western Region, began his railway career in the Traffic Department of the Great Western Railway at Winchester in 1924. After gaining experience at Basingstoke, Mr. Hilton was transferred to the District Agent's office at Southampton, and was appointed Chief Clerk when the joint G.W./L.N.E./L.M.S. organisation was introduced in 1937. Following this appointment, he held positions in the Goods Department at Reading and Slough, and, in 1947, became Cartage Superintendent, South Lambeth. Later he was associated with the London Commercial Service and, subsequently, became leader of the Western Region Commercial Superintendent's Special Staff Investigation Committee. In 1953, Mr. Hilton was appointed Head of Staff Section, Commercial Superintendent's Department, Paddington, and, in 1956, transferred as Staff Assistant to the Chief Commercial Manager, London Midland Region. On January 1, 1957, Mr. Hilton assumed responsibility of the London Goods District, London Midland Region. In October that year, he was appointed Joint District Goods Manager, Birmingham, Western and London Midland Regions.

We regret to record the death on October 30, at the age of 72, of Mr. J. Mackinnon, formerly Chief Engineer, North Western Railway of India. He was educated at Glasgow Academy and Fettes College, and served his apprenticeship in civil engineering on the former Caledonian Railway. Subsequently he was employed as an assistant engineer, prior to his appointment on North Western Railway of India in a similar capacity in 1909. Until 1914, Mr. Mackinnon was employed on construction and survey, and later open line maintenance. In 1916 he entered military service under the Railway Directorate in Mesopotamia, holding the rank of Captain. On his return to the N.W.R., in 1919, he was employed on open line as Executive Engineer, and later as Divisional Engineer. In 1926 he acted as Deputy Agent at headquarters, and three years later he was appointed Acting Deputy Chief Engineer. In 1931 he became Deputy Agent, the position in which he was confirmed in 1935. Later that year Mr. Mackinnon officiated as Chief Engineer, N.W.R. In 1936 he was made Senior Government Inspector, Bombay. In 1937 he was appointed Acting Director of Civil Engineering, Railway Board, after which he returned to the N.W.R. as Chief Engineer. In 1938 Mr. Mackinnon officiated as General Manager of that line for four months. He retired in 1939.

Mr. W. R. Stevens, M.Inst.T., Divisional Traffic Manager, Cardiff, Western Region, British Railways, since June this year, was educated at Clifton College. He joined the Great Western Railway in the General Manager's Office, Paddington, in 1919, and was transferred to the Office of the Superintendent of the Line, Paddington, in 1932. He was appointed Junior Assistant to the Divisional Superintendent, Paddington, in 1933, and Chief Clerk to the Divisional Superintendent, Gloucester, in 1935. He became Assistant Divisional Superintendent, Newport, in 1939, and was appointed Divisional Superintendent in 1946. In 1956, Mr. Stevens became South Wales Area Officer, Cardiff. He was President of the Newport and Monmouthshire Chamber of Commerce in 1953.

Mr. R. C. Hilton
Appointed Divisional Traffic Manager, Birmingham, Western Region

Mr. W. R. Stevens
Divisional Traffic Manager, Cardiff, Western Region

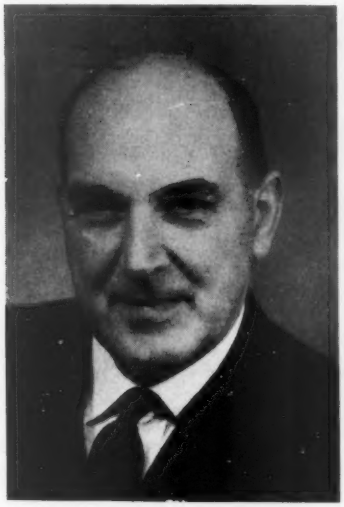
We regret to record the death, at the age of 63, of Mr. W. C. Cowan, former Assistant Divisional Superintendent, Baker Street, London Transport Executive.

Mr. C. H. Angell, Chief Accountant of the B.S.A. Tools Group, and Mr. P. B. Hugman, Export Manager, have been appointed Directors of B.S.A. Tools Limited.

Wolf Electric Tools Limited announces that the following have been elected to the board: Mr. N. McCann, Secretary & Director; Mr. R. G. J. Nisbet, Director of Canadian Operations; Mr. J. A. Jackson, Works Director, and Mr. W. N. Scottorn, Sales Director.

Mr. J. H. F. Page

Appointed District Traffic Superintendent, Cardiff, Western Region



Mr. W. J. Morris

Appointed District Traffic Superintendent, Newport, Western Region

Mr. L. A. Morgan

Appointed Operating Officer Cardiff, Western Region

Mr. J. H. F. Page, District Operating Superintendent, Cardiff, Western Region, British Railways, who, as recorded in our October 24 issue, has been appointed District Traffic Superintendent, Cardiff, joined the Great Western Railway at Theale in 1921. After gaining experience on station and relief work in the London and Cardiff Divisions, he was transferred to the office of the Superintendent of the Line at Paddington as Travelling Clerk, in 1938. On the outbreak of the 1939-45 war he joined the Military Section of the Superintendent of the Line's Train Office, being engaged on special duties until 1940, when he was appointed Junior Assistant to the Divisional Superintendent, Cardiff. In 1941, Mr. Page was transferred to the Assistant Superintendent of the Line's Office, Cardiff, where he was engaged on freight train operations. In the following year, he became Assistant Divisional Superintendent at that place. Mr. Page was appointed District Operating Superintendent at Worcester in 1953, and at Cardiff in 1956.

Mr. W. J. Morris, District Operating Superintendent, Newport, Western Region, British Railways, who, as recorded in our October 24 issue, has been appointed District Traffic Superintendent, Newport, joined the Great Western Railway at Somerton in 1916. After gaining station experience in the Bristol Division, Mr. Morris was selected, in 1923, for a four years' course of special training in the Operating, Commercial, Road Transport and Docks Departments. In 1927, he was transferred to the Office of the Superintendent of the Line, Paddington, and served in the Staff, Pooling & Closer Working, and Timetable Sections. In 1939, he was attached to the Military (Personnel Movement) Section. In 1944, Mr. Morris was appointed Chief Clerk to the Divisional Superintendent, Exeter, and, in December, 1947, became Assistant Divisional Superintendent, Worcester, an appointment which was redesignated Assistant District Operating Superintendent in 1950. He transferred to Chester in a similar capacity in 1951. In 1953, he was appointed Chairman of a committee to investigate suburban passenger train services in the Birmingham area. He returned to Chester in 1954 as Acting District Operating Superintendent, and was confirmed in that position later the same year. In 1956 he became District Operating Superintendent, Newport. Mr. Morris is a member of the Newport & Monmouthshire Chamber of Commerce and the Newport Port Consultative Committee. He is also this year's President of the Newport Area Council, British Railways Staff Association.

Mr. L. A. Morgan, M.B.E., District Operating Superintendent, Chester, Western Region British Railways, who, as recorded in our October 24 issue, has been appointed Operating Officer, Divisional Traffic Manager's Office, Cardiff, joined the Great Western Railway in the Divisional Superintendent's Office, Pontypool Road, in 1923. Mr. Morgan served in the Newport Division until 1941, when he became Stationmaster, Portskewett. Later he was appointed Assistant Stationmaster at Newport (High Street), transferring to the office of the Superintendent of the Line, in 1947, as Headquarters Chief Inspector. In this position his duties included travelling on the Royal Train. Mr. Morgan was appointed Assistant to the District Operating Superintendent at Cardiff in 1951 where, in 1954, he became Assistant District Operating Superintendent. While at Cardiff he served as Chairman of the Passenger Services Research Committee; was engaged in planning the reorganisation of local branch line services in South Wales; and was Chairman of Committees dealing with dieselisation schemes in South Wales and other districts. Since 1956 he has been District Operating Superintendent, Chester. He received the M.B.E. in 1952. Mr. Morgan is well known in sporting circles, and has played Rugby for several clubs and for British Railways teams.

Mr. G. A. Ricketts, Principal Foreign Representative, Steels Engineering Products Limited, is making an extended business tour of the Federation of Northern & Southern Rhodesia, British East Africa, and the Sudan.

The Late Major Malcolm Spier

The following were among those who attended the Memorial Service held on October 24 at St. Georges-Tron Church, Glasgow, for the late Major Malcolm Scott Spier, former Chief Officer for Scotland, London Midland & Scottish Railway, at which the Very Revd. George F. McLeod, M.C., D.D., officiated:—

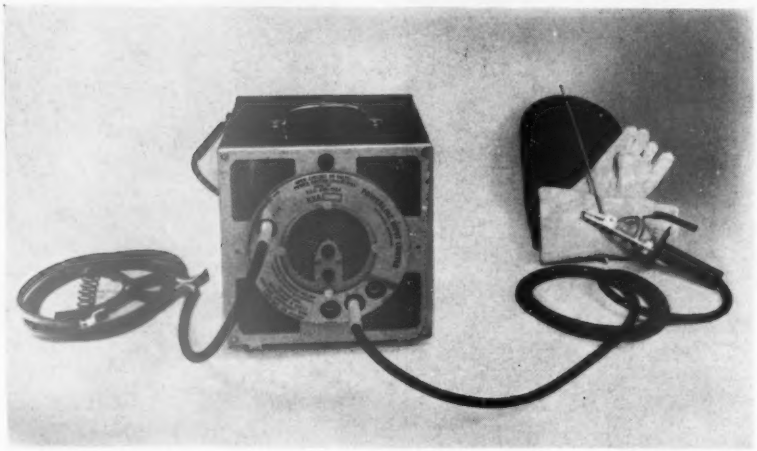
Mrs. Speir (widow), accompanied by her brother Sir Ian Bolton, Bt., Chairman of the Scottish Area Board, and other members of the family; Sir John Denholm, Mr. F. Donachy, and Mr. P. L. Meldrum, Members of the Scottish Area Board; Mr. James Ness, General Manager, British Railways, Scottish Region, who also represented the Members and Officers of the British Transport Commission, London Headquarters.

Officers and staff, active and retired, of the Scottish and other Regions; Mr. M. L. Howard Williams, Secretary to the Area Board, London Midland Region, representing Lord Rusholme, Chairman of the London Midland Area Board and the General Manager and Officers of the London Midland Region; Mr. C. S. McLeod, Regional Establishment & Staff Officer, representing the General Manager and Officers of the Eastern Region; Mr. C. E. R. Sherrington, Director of Research Information Division, British Transport Commission Headquarters.

Mr. F. D. M. Harding, General Manager, the Pullman Car Co. Ltd.: Mr. D. A. Stringer, Docks Manager, East Coast Scottish Ports, representing Sir Robert Letch, General Manager & Chairman of Board of Management, British Transport Docks: Captain T. S. Kay, Docks Manager and Harbour Master, Ayr & Troon Harbours; Mr. J. Newman, Retired Docks Manager, East Coast Scottish Ports; Mr. W. Marshall and Mr. B. Smith, Ulster Transport Authority; Mr. J. R. Bennett, representing Canadian National Railways.

Sir A. Murray Stephen; Sir Reginald Graham; Mr. W. Leslie Faid, Manager of the Commercial Bank of Scotland; Mr. R. Bruce Gibson, Scottish Controller of Thomas Cook & Son Ltd.; Mr. John MacMillan, representing the Toc H Movement and a large representation of the Boy Scout Movement.

NEW EQUIPMENT AND PROCESSES



Toroidal Arc Welding Transformer

THE Fararc 200 fan-cooled toroidal arc welding transformer combines low weight and small size with a high power factor.

The unit weighs 70 lb. and is contained in a steel case measuring 14 cu. in. It can readily be carried in one hand and, apart from general industrial use, is suitable for maintenance welding on carriages and wagons on site where any 200/250 V. or 400/440 V. a.c. mains supply is available. It is capable of welding steel up to 1½ in. thick, and when used with carbon torch equipment can cut steel ½ in. thick.

The power factor is between 0·8 and 0·9 lagging which is the figure required by electricity boards, therefore a power factor correction condenser is not needed. Maximum continuous output is 200 A.

Combined with high power factor, the set has an open circuit voltage of 50 V. which gives a greatly reduced load on the supply line. There is a connecting box at the back of the machine for varying the input voltage.

The set uses glass insulated wire throughout, wrapped where necessary in glass woven cloth; the whole is impregnated with silicone varnish and baked. No combustible materials are used in the set and it can operate without damage at temperatures up to 180° C. As a safeguard against overheating a thermostatic switch is incorporated which cuts off the welding current but leaves the cooling fan running so that the windings rapidly come down to working temperature and welding can proceed again.

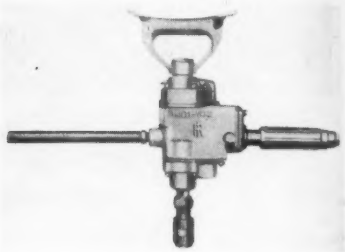
A junction box will be available soon for the coupling of two or more of the sets together to give 400, 600, or 800 A.

The Fararc is priced at £98 10s., complete with all ancillary equipment, and delivery is six to eight weeks. It is manufactured by Portable Welders Limited, Castle Mills, Buckingham, Bucks.

Air-Driven Portable Drill

LOWERING of costs should be possible in drilling, reaming and tapping in all kinds of production, constructional, and maintenance work in railway shops with use of the Series 22 Multi-Vane air-driven hand-held reversible drill.

Reserve of power is provided by a multi-vane motor. Air pressure under the vanes is claimed to ensure prompt starting with the drill in any position, and vibration-free and chatterless running minimises tool wear and breakage. All rotating parts are mounted on ball bearings. The



motor is lubricated by a continuous metered supply of oil from a built-in reservoir.

Three models are listed, 22J, 22K, 22M for speeds of 1,025, 725, and 350 r.p.m. respectively. The spindle on sizes 22J, 22K is threaded to take 0-½ in. drill chuck; optionally No. 1 or No. 2 Morse taper socket can be fitted. On 22M No. 2 Morse taper spindle is standard but optionally threaded spindle with 0-½ in. drill chuck is available. Feed length on all sizes is 2½ in. Maximum drilling capacities are $\frac{9}{16}$ in. for 22J, 22K, and $\frac{7}{8}$ in. for 22M.

The manufacturer, Ingersoll-Rand Co. Ltd., 164, Queen Victoria Street, London, E.C.4, will provide further information on request.

Clear Protective Lacquer

ISOCYNE clear protective lacquer, for use on natural wood grains, is moisture, chemical, and abrasion resistant and when applied to outside surfaces, such as station waiting rooms and other platform buildings, can withstand the effects of steam from trains, and exceptional weather conditions.

It also provides practical protection in public places where furniture and fitments frequently have to stand up to hard wear. It resists cigarette burns and is unharmed by alcohol or alkalis in normal dilutions.

Isocyne has been under active development for over four years and is at present being specified or tested by British Railways, the Ministry of Works, the London County Council, and the Timber Research Association. The accompanying illustration shows a new waiting room at Leytonstone High Road Station, British Railways, Eastern Region, finished in Isocyne lacquer.

The price of the lacquer is £3 9s. a gal. and delivery is ex stock. The manufacturer is the British Domolac Co. Ltd., Harrow Manor Way, London, S.E.2.

Opening of B.T.C. Freight Transport Exhibition

Mr. Harold Watkinson's announcement: Government decision to "press on with" railway modernisation

The Minister of Transport & Civil Aviation, Mr. Harold Watkinson, opened the Freight Transport Exhibition at Battersea Wharf Goods Depot, London, S.W., on October 30. A description of the exhibition, with illustrations of some of the exhibits, is given on pages 570-2.

Sir Brian Robertson, Chairman of the British Transport Commission, introducing the Minister and welcoming the representatives of trade and industry invited to view the exhibition on its first day, pointed out that the exhibits were examples of what nationalised transport could do by road or rail and, perhaps even more important, by road and rail. He was only sorry that they could not include the canals. There was a preponderance of rail exhibits, mainly because not much was generally known about the advances made in freight handling by British Railways and about the progress which they had made in ensuring door-to-door service.

Container Traffic

The exhibits themselves would show the efforts being made to give door-to-door service and to avoid damage to goods traffic. British Railways were the pioneers of the container system, of which there were several examples on show at Battersea. They now had over 44,000 in service and a wide range of special types.

Export Freight Service

They could not show there the improvements made in transit times. Since their export freight service was started two years ago, there has been no case recorded against British Railways of a consignment missing the ship. This service now linked up some 500 stations with seven of the principal ports in Britain.

As regards inland services, overnight delivery was now assured between a very large number of places. There had been a big increase in the number of express freight trains. On every working day there were 760 of these fast freight trains compared with 300 in 1938 and they now have 250,000 freight wagons equipped with a continuous brake.

Charges

As to charges it depended upon the nature of the load and the distance involved, whether it is cheaper to consign by road or rail. British Road Services claimed that their charges were fully competitive with those of their competitors on the road.

For British Railways, he explained, the trunk movement costs of a well-loaded wagon or container were low. By keeping the terminal and shunting costs low also, the railways would offer attractive rates especially for wagon-load and container-load traffic.

Improvements in Passenger Traffic

Mr. Harold Watkinson, declaring the exhibition open, said that the travelling public could see much of what was being done to improve passenger services—the diesel locomotives, the multiple unit diesel sets and the electrification works. A train like the "Master Cutler" Pullman express between London and Sheffield was an indication of what the Commission was doing as regards passenger traffic. The resilience of passenger revenues showed that the public responded to these improvements in services. On the passenger side modernisation was producing the dividend hoped and planned for.

The emphasis, he added, was now on freight. The B.T.C. was the biggest freight carrier in the country: last year British Railways carried some 274 million tons in freight trains and British Road Services carried over 16 million tons.

Developments in Goods Traffic

In the last 12 months, the number of timed freight expresses had risen up by 25 per cent, and as the rolling stock was progressively fitted with continuous brakes, this number would increase.

Door-to-door delivery, and particularly the various types of containers and methods of handling them shown at Battersea, was a development with which the Commission was pressing ahead. In 1957 over 700,000 loaded containers of all types were despatched. They catered for many specialised traffics, ranging from ice cream to road-making materials, as well as for general merchandise. British Railways and B.R.S. in this respect were well abreast of practice in the rest of Europe.

Commercial Enterprise

Even more important was the enterprise of the nationalised transport undertaking on the commercial side. The Government recognised this when it passed the Act of 1953 to release the Commission from the out-of-date shackles which had bound the railways and to reorganise their undertaking on more commercial lines. Parallel with the development of the mechanical equipment, the Area Boards had worked out a commercial structure capable at the local levels of responding quickly to the needs of industrialists and traders.

Sir Brian Robertson had referred recently to the present financial position of the railways, and described the sudden severe drop in railway receipts from the heavy traffics—coal, coke, and in steel—as a grievous blow to the Commission.

Sir Brian and he kept a close watch together on the progress of the railway modernisation plan, and on the effects which the economic climate had on it. This sudden and, he believed, temporary squall had struck them a very heavy blow. It was particularly hard that it should fall at this point in time, when otherwise the Commission would have begun to reap the financial benefits from the modernisation plan.

The freight position was such that the Ministry of Transport & Civil Aviation and B.T.C. had felt it desirable to carry out a detailed investigation into present and future prospects. They would shortly be announcing their findings, but not in any defeatist sense. Not only British Railways were affected.

Because the Government realised that this difficulty was temporary and believed that efficient modern transport was necessary, this was the time to take their courage in both hands and press on with modernisation, rather than hold it back. They had always realised that success would be more difficult to achieve on the freight side than on the passenger side. But they must succeed here, not only in the interest of the railways alone but in that of the country.

Investment in Transport

The Government was laying out money to improve roads and to improve railways. It believed in competitive service; but transport users who planned wisely must

Mr. Harold Watkinson, with the Mayor of Battersea and Sir Brian Robertson, being shown a folded Collico container by Mr. P. O'Brien, of Collico Limited

look at their interests in the long term as well as in the short. It could be to no one's advantage if the public carriers of this country are given only the "leftovers" to carry. No undertaking could give a good service on that basis.

Mr. Watkinson concluded by urging transport users to test the public transport services and use them; they were paid for by their money and it was in their interest that they should be fully used.

Those who accepted invitations to be present on October 30 included:

House of Lords: Viscount Falmouth; Commander the Lord Gifford, R.N.; Lord Hurcomb; Lord Teynham

House of Commons (M.P.s): Messrs. J. Arbuthnot; F. Beswick; John Boyd-Carpenter, Minister of Pensions & National Insurance; R. Gresham Cooke; Viscountess Davidson; Messrs. W. Deedes; Geoffrey de Freitas; C. J. A. Doughty; Colonel D. Glover; Mr. C. F. H. Gough; Sir Robert Grimston; Messrs. Harold Gurden; James H. Hoy; M. Clark Hutchinson; W. G. Leburn; Major E. A. H. Legge-Bourke; Messrs. Leslie Lever; G. S. Lindgreen; Niall Macpherson, Joint Parliamentary Under-Secretary of State; Commander Douglas Marshall; Messrs. F. Noel Baker; E. Popplewell; J. Ridsdale; A. Roberts; W. S. Shepherd; L. Spriggs; G. R. Strauss; J. M. Temple; J. D. R. T. Tilney; W. M. F. Vane (Joint Parliamentary Secretary); Geoffrey Wilson

Ministry of Transport & Civil Aviation: Messrs. G. R. H. Nugent, M.P., Joint Parliamentary Secretary; P. Faulkner; W. R. Maunder; Brigadier C. A. Langley; Messrs. R. C. S. Hoare; W. P. Shovelton; A. D. Scudemore; R. A. Lovell; Colonel D. McMullen; Colonel W. P. Reed

British Transport Commission

Members: Sir John Benstead, Deputy Chairman; Mr. H. P. Barker; D. H. Cameron of Lochiel; Mr. R. F. Banks; Lord Rusholme; Sir Philip Warter; Mr. J. W. Watkins

Officers: Major-General Ll. Wansbrough Jones, Secretary General; Messrs. S. B. Taylor, Chief Secretary; H. E. Osborn, Chief Accountant & Financial Adviser; M. H. B. Gilmour, Chief Solicitor & Legal Adviser; T. H. Hollingsworth, Traffic Adviser; A. R. Dunbar, Manpower Adviser; R. C. Bond, Technical Adviser; J. H. Brebner, Public Relations Adviser; D. S. M. Barrie, Assistant Secretary General; M. A. Cameron, Principal Officer, Administration; D. Murray, Assistant Traffic Adviser (Freight); C. H. Brazier, Director of Industrial Relations; L. J. Hamblin, Industrial Relations & Welfare Officer; W. S. Barnes, Chief Estate & Rating Surveyor; A. C. West, Chief Constable; C. C. Inglis, Chief Research Officer; N. E. Hedger, Principal Works & Equipment Officer

British Railways Central Staff

Messrs. A. A. Harrison, Chief Freight Officer; E. A. W. Dickson, Chief Passenger Officer; H. F. Pallant, Chief Operating Officer; R. Thompson, Motive Power Officer; L. B. Marson, Development Officer; T. V. Nicholson, Freight Rolling Stock Officer; S. S. Hirst, Assistant Freight Rolling Stock Officer; J. F. Harrison, Chief Mechanical Engineer; E. S. Cox, Assistant Chief Mechanical Engineer; S. B. Warder, Chief Electrical Engineer; T. M. Herbert, Director of Research; E. J. Vipong, Operating Officer

B.T.C. Design Panel: Mr. E. C. Ottoway

B.T.C. Police Committee: Sir Frank Newsam

B.T.C. Advisory Panel on Railway Electrification: Mr. J. S. Tritton.

British Railways Productivity Council: Messrs. S. F. Green; C. W. Evans; J. L. Simons

B.T.C. Research Advisory Council: Sir William Stanier

British Transport Joint Consulative Council: Messrs. Rowland Davies; A. L. Castleman

Transport Tribunal: Messrs. J. C. Poole; H. H. Phillips; Sir Howard Roberts

Eastern Area Board: Mr. Jack Tanner

Scottish Area Board: Messrs. F. Donachy; P. L. Meldrum; and R. S. Boyd (Secretary)

Southern Area Board: Messrs. K. Preston; J. MacNaughton Sidey; and L. Mapleston (Secretary)

Eastern Region: Messrs. H. C. Johnson, General Manager; S. G. Hearn, Assistant General Manager (Traffic); W. G. Thorpe, Line Traffic Manager (Great Eastern); J. W. Dedman, Line Traffic Manager (L.T.S.); F. G. Crabb, Commercial Officer; T. R. Hawkes, Regional Accountant, Eastern & North Eastern Regions

London Midland Region: Messrs. David Blee, General Manager; A. E. Robson, Chief Mechanical & Electrical Engineer

North Eastern Region: Mr. H. A. Short, General Manager

Scottish Region: Messrs. G. W. Stewart, Assistant General Manager; James Blair, Carriage & Wagon Engineer; S. E. Raymond, Commercial Officer

Southern Region: Messrs. David McKenna, Assistant General Manager; S. A. Fitch, Assistant General Manager (Traffic); R. E. Sinfield, Shipping & Continental Manager; W. J. Sykes, Chief Mechanical & Electrical Engineer; F. E. Campion, Chief Civil Engineer

British Road Services: Major General G. N. Russell, Chairman; Messrs. G. F. Sinclair; and G. W. Quick Smith, Members of the Board of Management; A. H. Passey, Supplies Officer; A. J. Wright, Divisional Manager, S.E. Division

British Transport Docks: Sir Robert Letch, Chairman

British Transport Waterways: Mr. W. L. Ives, Principal Traffic Officer

British Transport Hotels and Catering Services: Mr. T. H. Baker, Secretary

London Transport Executive: Sir John Elliot, Chairman; Messrs. A. H. Grainger, Deputy Chairman; L. C. Hawkins

Civic Authorities: Councillor C. E. Lang, Mayor of Battersea

Professional Institutions: Messrs. G. T. Hart, Secretary, Institution of Locomotive Engineers; A. D. Smalley; and H. A. R. Binney, British Standards Institution; W. H. Stebbings, Education Officer, Institute of Transport; Lord Halsbury, Department of Scientific & Industrial Research; Mr. I. F. D. Bingham, Agricultural Engineers' Association Limited

Nationalised Industries: Messrs. J. Latham, Deputy Chairman, National Coal Board; A. W. Brookes, Marketing Department (Transport), National Coal Board; Sir Harold Smith, Chairman, Gas Council; Messrs. G. H. Tilbrooke, Eastern Electricity Board; W. Simpson, British European Airways

Manufacturers and Traders Participating:

Messrs. J. Edkins, Director, Ironbridge Service Depot; A. R. Wright; and R. H. Gluyas, Lansing Bagnall Limited; R. M. Gover, Director, A. C. Penman Limited; D. S. Hanlock, Cement Marketing Board; Captain P. G. Carew, Tube Investments Limited (T.I. (Group Services) Limited);

Messrs. R. F. Williams, Chairman, M.A.T. Transport Limited; G. Adlem, Assistant, Inland Distribution Department, Esso Petroleum Limited; W. A. Leaver, Chief Design Engineer, Newton Chambers & Co. Ltd.; A. H. Cooke, Director & General Manager, Pressoturn Limited; R. M. Davenport, Managing Director; and J. L. Wilkinson, Sales & Service Director, Shelroke & Drewry Limited; H. P. McClean, London Manager, Ransomes & Rapier Limited; C. H. Cuttriss, Managing Director, W. C. Youngman & Co. Ltd.;

G. C. Howard, Director, Collico Limited; T. G. Griffiths, Northern Aluminium Co. Ltd.; Sir John Charrington, Chairman, Charrington, Gardner, Locket & Co. Ltd.; Sir George Dowty, Dowty Hydraulic Units Limited; Mr. J. C. Brister, Traffic Manager, Ford Motor Co. Ltd.; J. W. Shirley, Park Royal Vehicles Limited;

National Trade and Industrial Associations:

Messrs. H. N. Edwards, Railway Carriage & Wagon Builders' Association; G. R. Curry, Locomotive & Allied Manufacturers' Association of Great Britain; James Oldroyd, British & Electrical Allied Manufacturers' Association; A. G. F. Hey, Association of British Chambers of Commerce;

H. Knight, British Iron & Steel Federation; Dr. Leckie, Iron & Steel Board; Messrs. K. M. Stobart, Coal Merchants' Federation of Great Britain; J. W. Stewart, Chamber of Coal Traders;

Sir Norman Kipping, Director General, Federation of British Industries; Messrs. D. L. Walker, Secretary, Federation of British Industries; C. S. Garland, President, National Union of Manufacturers; A. J. Malacrida, Mansion House Association; M. H. L. Whitehouse, British Engineers' Association; F. L. Forge, English Timber Merchants' Association

Central Transport Consultative Committee: Mr. J. C. Chambers, Secretary

Transport Users' Consultative Committees: Sir Patrick G. Hamilton, Chairman, North Western Area; Colonel Mark Whitwell, Chairman, South Western Area; Captain E. H. Longsdon, R.N.; Messrs. L. Mizen; W. Combren Longstaff, South Eastern Area

Overseas Railways Representatives

Messrs. D. C. Brown, Chief Mechanical Engineer, S. E. Lord, Senior Mechanical Engineer, S. H. Saunders, Senior Mechanical Engineer, Crown Agents for Oversea Governments & Administrations

Messrs. J. E. Woods, Antofagasta (Chili) and Bolivia Railway Co. Ltd.; E. K. Hoar, Agent General for Western Australia; R. J. Garrard, Tasmanian Government Railways; A. H. Greenham, Agent General & Trade Commissioner for South Australia; L. J. Madnani, Railway Adviser to the High Commissioner of India; G. P. Bhalla, Chief Railway Inspecting Officer, Indian Railways;

R. F. Marriott, Advisory Engineer, New Zealand Government Railways; W. M. Codnington, Chairman, Nyasaland Railways Limited; F. O. Ellis, Peruvian Transport Purchasing Co. Ltd.; O. S. Naylor, London Agent, Rhodesia Railways; H. J. Binder, Director, M. Vooeht, Buyer, Paraguayan Central Railway Co. Ltd.; W. Zippert, London Representative, German Federal Railway; H. Arkle, European Manager, D. B. Watson, European Freight Manager, Canadian Pacific Railway Company; W. Ferlander, London, Manager, Swedish Travel Bureau.

LONDON MIDLAND REGION CONTINENT AND SCOTTISH LOCHS CRUISES.—Cruises of the Dutch, Belgian, and French coasts for six or nine days on three dates next June and a nine-day tour of the Scottish Lochs in September, are to be made by the *Duke of Lancaster*, one of the 5,000-ton British Railways, London Midland Region, vessels which normally serves the Heysham-Belfast route. This follows the successful cruises to the Continent made by the ship last season when 750 passengers went on three cruises.

JOHN I. THORNYCROFT & CO. LTD. RESULTS.—Sir John E. Thornycroft, Governing Director and Chairman, John I. Thornycroft & Co. Ltd., reports that trading conditions in both the home and export markets have been very difficult, and the balance of trading of the organisation for the year ended July 31, 1958, was less by £406,119, compared with the average for the preceding three years. Transport Equipment (Thornycroft) Limited and Thornycroft (Australia) Pty. Ltd. made losses for the year.

Retired Railway Officers' Society Luncheon

Mr. Harold Watkinson on the burden of implementing the railway modernisation plan

The annual autumn luncheon of the Retired Railway Officers' Society took place at the May Fair Hotel, London, W.1, on November 4. Mr. H. G. Rampling, the President, was in the chair.

Mr. Rampling, after the Loyal Toast, welcomed the guests. He expressed his Society's pleasure at the presence of the Minister of Transport & Civil Aviation, Mr. Harold Watkinson; Sir Brian Robertson, Chairman of the British Transport Commission; Sir John Elliot, Chairman of London Transport Executive; Sir Eric Gore-Brown and Sir Robert Burrows, sometime Chairmen respectively of the Southern and L.M.S. Railways Companies; and of several General Managers of the Regions of British Railways. He regretted the unavoidable absence of Sir Ronald Matthews, a former Chairman of the L.N.E.R. Company. He proposed the health of "Our Guests," coupled with the name of Mr. Harold Watkinson.

Mr. Harold Watkinson, replying, commented on the difficulty of the task of those responsible for implementing the railway modernisation plan. Modernisation, he believed, might well have been begun after the war, in the late 1940s. Today the work of bring the railways to a state of modernity and efficiency which would enable them to function in the contemporary world of industry, and transport was largely a matter of catching up with developments in road transport, including the growth of "C" licence road transport and that of traffic along the new motor roads, and with changes in the economic environment. He expressed his wishes for the continued prosperity of the Society.

Mr. David Blee, General Manager of the London Midland Region of British Railways, proposing the toast of the Retired Railway Officers' Society, expressed appreciation of the way in which the Society promoted and maintained friendship among retired railway officers, and between them and younger men.

Mr. G. Morton, Immediate Past President replied.

Mr. E. S. Hunt proposed the health of the President. Mr. Rampling in his reply praised the work of the Secretary, Mr. J. W. Kerr, in arranging the luncheon.

Others who intimated their intention to be present were:—

Messrs. C. H. Adey, A. Appleyard, E. W. Arkle, F. W. Baker, A. P. J. Ball, G. B. Barton, D. Bassett, H. Bastin, F. B. Belton, O. F. C. Bender,

Sir Ralph Biddle, Messrs. W. E. Blakey, A. Bond, R. W. Boorman, W. P. Bradbury, E. W. Bratchell, F. S. Bridge, J. Bridger, L. C. Brittlebank, Sir Eric Gore Browne, Mr. H. J. Burcham, Sir Robert Burrows.

Messrs. H. J. Caines, C. Carey, W. B. Carter, A. L. Castleman, S. T. Clayton, R. L. P. Cobb, L. W. Conibear, A. D. Cook, F. E. Cox, G. E. Curtis, W. S. Cutler, J. S. Davis, Captain R. Davis, Messrs. P. H. Davies, W. R. Davies, W. O. Davies, J. H. V. Docwra, H. J. Donovan, J. T. Drinkwater, A. R. Dunbar, E. C. Dewick, H. Eccles, L. Edwards, Sir John Elliot, Messrs. J. W. Enser,

A. E. Flaxman, B. P. Fletcher, I. R. Frazer, W. Geldard, M. H. B. Gilmour, A. T. Gosden, R. O. Griffiths,

A. E. Hammett, F. Harding, G. J. Harris, E. G. Harrison, R. F. Harvey, T. R. Hawkes, S. G. Hearn, G. Hickling, P. M. B. Hitching, R. B. Hoff, T. H. Hollingsworth, C. P. Hopkins, R. P. Humphrys, R. A. Humphrys, E. S. Hunt, A. P. Hunter, G. S. Hussey,

T. E. Jackson, B. X. Jessop, J. S. Jones, W. G. Jones, C. Jordan, W. P. Keith, J. W. Kerr, C. F. Klapper, H. C. Lang, J. H. Laundy, T. J. Lynch,

A. B. Macleod, I. Macmillan, A. H. M. McMurdo, W. J. Manclark, S. Marchant, A. E. Marriott, G. Matthews, J. Matthews, E. W. Mauger, L. A. Metcalf, J. P. Milton, G. Morton,

Sir Charles Newton, Messrs. L. H. K. Neil, R. Norrish, A. W. Norman, P. Nunn, T. Neal, F. J. Paterson, A. C. B. Pickford, M. Pearson, H. H. Phillips, H. W. Phillips, F. Pope, H. H. Powell, W. H. J. Pyne, Sir A. Quartermaine,

Messrs. A. S. Railston, J. Ratter, L. N. Rawes, H. G. N. Read, R. A. Riddles, W. B. Richards, Dr. H. R. Rishworth, Sir Brian Robertson, Messrs. V. A. M. Robertson, C. I. Routh, T. W. Royle,

R. Sadler, W. H. Sandeman L. S. Sanson, R. H. Scarsbrook, G. H. Searle, F. H. Sedgwick, H. A. Short, A. Shouler, T. D. Slattery, S. W. Smart, F. Smith, M. G. R. Smith, Sir William Stanier, Messrs. H. H. Starr, G. Sutcliffe,

A. W. Tait, A. K. Terris, J. W. Terry, W. G. Thorpe, H. E. Thompson, M. D. Thompson, E. D. Trask,

J. W. Watkins, E. Wharton, A. D. Wharton, P. D. Wharton, H. E. O. Wheeler, T. H. Williams, S. Williams, R. F. Wilson, H. Winskill, J. R. Worrall, F. J. Wymer, W. E. Yates.

Locomotive Engineers Visit G.E.C. and J. Stone Works

Processes and products shown at Fraser & Chalmers works at Erith and Charlton plant of J. Stone & Co. Ltd.

More than 150 Members and guests of the Institution of Locomotive Engineers visited the Fraser & Chalmers Engineering Works of the General Electric Co. Ltd., Erith, on the morning of October 31. Among the equipment shown were ore and coal screening plant, pulverisers for boiler fuel, and turbine equipment. The tour included the iron foundry, boiler shop, pickling shop and apprentice school. Mr. R. N. Millar, General Manager, received the party.

Later a visit was paid to the Charlton works of J. Stone & Co. (Charlton) Ltd., where the party was entertained to luncheon. Mr. B. W. Preston, Deputy Chairman, J. Stone & Co. (Holdings) Ltd., welcomed the guests. Mr. S. B. Warder, Vice-President of the Institution, representing Mr. R. Arbuthnott, President, who was unable to attend, replied to the toast of the Institution.

A tour of the works included the marine propeller, pattern, and core shops, the aluminium foundry, X-ray department, and despatch bay.

Items shown included equipment for pressure ventilation of railway vans, truck-trailer refrigeration, air-conditioning, Stone-Kheops and Stone-Faiveley intercoach couplers, Smith-Stone speedometer and track overspeed regulation for shunting locomotives, the Watchman heater to maintain coolant water temperature in diesel engines, steam generators for passenger stock, train lighting generation, Stone-Faiveley pantographs for electric locomotives and multiple-unit stock, and Stone-Mekydro hydraulic power transmissions.

Power Equipment for New Pullman Trains

Also displayed was auxiliary power equipment for the high-speed diesel Pullman multiple-unit sets being built by the Metropolitan-Cammell Carriage & Wagon Co. Ltd. for the St. Pancras-Manchester Central service.

Two underframe-mounted auxiliary power units are provided for each of the trains to supply power for amenities such as lighting, heating and cooling, air-conditioning, water heating, refrigeration and battery charging. Under winter conditions the total maximum load for the eight-car train is 160 kW., and in summer conditions when cooling is required, 120 kW.

Each unit consists of an engine-alternator-exciter integrally connected, a Rolls-Royce diesel eight-cylinder horizontal type engine (rated at 190 h.p., 1,500 r.p.m.), and a Stone three-phase four-wire-400 V., 50 cycles a.c. alternator, continuously rated at 120 kW. at 1,500 r.p.m. The alternator is totally enclosed, externally fan-cooled, being automatically controlled by a carbon pile regulator with transformer stabiliser.

Each auxiliary power unit is complete with its own controls, and protective devices are embodied to safeguard the system from fire, overload, over-voltage, lack of lubrication or coolant. Means are provided for starting and stopping the engine from either inside the car or from a position on the underframe adjacent to the auxiliary power unit.

Each power unit is permanently arranged to feed its own distribution feeder system down one side of the train. Except in very cold weather, one power unit will serve as a standby set. The circuits are so arranged that either power unit may be started up to take priority loads, the following power unit catering for the remaining load.

Means are provided in the distribution system to ensure that, in the event of a coupling being disconnected, the main circuit breaker is brought into operation to prevent power current being broken at the plug and socket.

The control voltage of the system is 24 V. d.c. and a 24-V. battery is provided for starting the auxiliary engine. A similar battery is also provided on all other cars for emergency lighting and air-conditioning operational controls.

Among those present were :—

Messrs. T. M. Abbott, I. Amesbury, A. C. Ap-Thomas, G. Arnott, T. H. Arthur, G. A. Ashton, L. V. Athron, F. C. Austen, L. P. Barker, H. H. C. Barton (Member of Council),

F. T. Barwell, A. Bates, E. S. Beavor, F. J. Bellwood, G. F. E. Best, C. N. Blakeney, K. P. Brockway, H. Brookes, L. J. Brown, P. J. M. Buchanan, G. Burrows, R. Burrows, R. W. Butcher,

A. Campbell (Past-President), J. H. Cansdale (Member of Council), Col. K. Cantlie (Member of Council), Messrs. T. R. Charlesworth, C. F. Cleaver, F. G. Clements, C. M. Cock (Past-President), C. T. Cock, W. J. Cole, J. G. Collyer, K. J. Cook (Past-President), I. J. R. Cookman,

A. Cormack, G. J. Corson, W. J. Cox,

M. A. Crane (Member of Council), T. A. Crowe, J. E. Croxall, B. T. Cuny, R. Curl, A. S. Davidson, A. L. B. Dawson, K. F. Douglas, G. H. Dowsett,

W. J. Edwards, C. J. Eydmann, A. Ferguson, A. E. O. Fish, R. G. Foster, W. E. Frost, M. A. Gardiner-Hill, J. K. Gessler, J. L. Gilbert, Lt.-Col. H. Gresham, Messrs. J. R. Grimsdell,

G. Wynn Hamel, J. Hannah, L. W. Harding, G. T. Hart (Secretary), R. F. Harvey (Member of Council), C. A. Heath, C. H. Heavey, R. J. P. Heck, K. Hegan-Brown, M. F. Hesse-Phillipson, G. Hill, T. D. Hill, H. Hinton-Cooper,

H. M. Hoather, R. Howard, E. P. Hubbard, J. T. Hudson, H. W. Huggins, G. Hyslop, E. Ingoldby, K. T. Ivy, E. M. Jackson, N. Johnson, D. M. Jones, J. E. H. Jones, W. Kelway-Bamber, L. A. King, L. Kitson, R. H. Lee, W. Lee, S. E. Lord, P. L. Lowrie,

C. Macdonald, R. F. Marriott, V. M. Marshall, F. Mason, S. McIntosh, C. L. Metcalfe, M. A. L. Metcalfe, M. P. Millard, T. C. B. Miller, H. R. Mills, A. H. Moody, N. H. Morris,

R. E. Nelson, S. Newman, G. W. Nicklin, W. F. Noble, K. J. Nunn, V. C. J. Nunn, P. Oldham, J. E. Owston, A. J. Parsons, F. G. Peake, S. A. R. Phelps, G. Pommery, A. C. E. Poole, C. H. Poynder,

A. Rankin, N. C. Rayner, N. Reast, D. Reeves, G. J. C. Reid, B. Reynolds, G. M. Rial, A. Sadler, E. W. Selby, A. J. Simpson, A. D. Smith, B. S. P. Smith, F. A. Smith, F. C. E. Smith, R. A. Smith, F. L. Stafford, C. A. Stead, A. Sykes,

D. R. Thomas, G. Thomas, W. T. Thompson, W. G. F. Thorley, W. N. Tonkyn, G. E. Townsend, J. G. Townsend, T. Tritton, R. M. Tufnell, M. G. Twitchett, J. F. B. Vidal (Past-President), H. R. L. Walker, S. B. Warder (Vice-President),

E. L. E. Wheatcroft, F. M. G. Wheeler, Miss B. J. White, Messrs. E. T. White, H. B. White, H. N. Wilkinson, J. C. Wilkinson, W. Cyril Williams (Past-President), W. H. Wilson,

A. J. L. Winchester, E. Windle, T. H. Windle, J. C. Winton, G. F. Wix, D. G. Woodman, J. M. D. Wrench, L. Wright, M. G. Young, and S. G. Young.

Parliamentary Notes

Rise in Investment for Railways

Mr. D. Heathcoat Amory, Chancellor of the Exchequer, in the continued debate on the Address in the House of Commons on November 3, stated that for several years now there had been a very strong upward current of investment in the public sector. A year ago this was running so hard that his predecessor, Mr. Peter Thorneycroft, had found it necessary to call a halt for a time. It was then laid down that the aggregate of public sector investment in 1958-59—the current year—and next year should not exceed that of 1957-58. As Mr. Thorneycroft had pointed out, this had not been, and never was, a matter of reducing the total level of public sector investment. It was a decision not to cut down that level, but to be content for the time being to go on at that level instead of climbing higher.

His predecessor had also announced a procedure of review of these public investments to keep them within the national resources.

"I would emphasise," continued Mr. Heathcoat Amory, "as I have done before, that a great deal of this public sector investment consists of long-term projects, work that will take two, three, four, or more years to carry out and cannot efficiently be interrupted when once begun.

"During this summer we conducted this review, and decided that it would be possible, in view of the changing circumstances of the economy, to allow public investment to rise somewhat. In the course of this general re-examination of programmes we put into operation a series of specific but limited relaxations designed to stimulate employment during this coming winter. . . . These increases were put into operation promptly, and most of them are now under way.

"As a result I expect that by the end of this year the rate of public investment will be running above that of last year, which is estimated to have been about £1,425 million. For next year, 1959-60, we envisage a level of public sector investment about £125 million to £150 million higher than that of last year.

"It is my expectation that when the level of production turns upwards, this will usher in a new period of expansion of every part of our economic life. For public sector investment this has two consequences: first, it means that our task must be to ensure that enough resources are devoted to what may be called the productive public investment needed to support expansion; electric power, railways, and roads.

"We are therefore providing a very considerable investment under these heads, a large increase over last year, both in absolute and percentage terms.

Viscount Hinchingbrooke (Dorset S.—C.) commented: The Chancellor has elevated the figures of public investment by £150 million, but we have not the slightest idea year by year how it is divided up between the railways, the roads, schools, hospitals and all the rest. We do not see it until we get one of these massive blue books at the end of the year, and then we have to wade through it page by page to discover what the facts are. I hope the Government will at least agree to get over the extraordinary reluctance of the Treasury to publish the capital investment programme and that they will do so by means of a White Paper.

Welfare and Safety of Railway Workers

As an amendment to the address of thanks to Her Majesty for the speech from the Throne, Mr. Francis Noel-Baker (Swindon—Lab.), Mr. Ernest Davies (Enfield E.—Lab.), Mr. G. Lindgren (Wellingborough—Lab.), Mr. H. Hynd (Accrington—Lab.), Mr. C. J. Simmons (Brierley Hill—Lab.), and Mr. G. Jeger (Goole—Lab.) tabled on October 30 in the House of Commons, the following:—

"But humbly regret that, despite repeated and emphatic assurances by Your Majesty's Ministers that they would introduce legislation to make further provision for the health, welfare and safety of railway and allied workers, in the light of the recommendations of the Gowers Committee, no such proposals are contained in the Gracious Speech."

Mr. Hugh Gaitskell, leader of the Opposition, in opening the debate on the Address on October 28, said there was no suggestion of legislation to implement the Gowers Report. Once again office workers, shop workers, and railway workers were to be denied the protection which the Gowers Report recommended for them. He was surprised at this, as the Joint Parliamentary Secretary to the Ministry of Transport was himself a member of the Gowers Committee, and announced only this summer that the Government were fully in favour of the principle of legislation for railway workers.

Staff and Labour Matters

R.S.N.T. Decisions

The following decisions have recently been issued by the Chairman of the Railway Staff National Tribunal in connection with claims which have been referred to him for determination:—

Decision No. 76 dated October 30, 1958.

I have given careful consideration to the evidence and submission of the parties and I find and so award that drivers of Scott electric tractors should be graded for all purposes as Senior Goods Porters and paid in accordance with the offer contained in Railway Staff Joint Council Min. No. T.15 dated July 31, 1956.

Decision No. 77 dated October 30, 1958.

I have given careful consideration to the evidence and submission of the parties and I find and so award that salaried staff required to undertake the full duties of a post of higher classification than their own as a result of another member being absent through sickness beyond the period of 13 weeks continuously shall, from the date hereof, be entitled to receive higher grade duty payment as from the expiration of the period of 13 weeks. Save as aforesaid I find against the claim.

The claim in the latter case was for the appropriate higher grade duty rate to be paid in all cases where salaried staff are required temporarily to relieve or cover a post in a higher class, such payment to be made from the first day of performing the higher grade duty.

Overtime for Railway Shopmen

Under an award of the Industrial Court (No. 2705) dated October 14, 1958, the rate of pay for the first two hours of overtime worked on weekdays by railway shopmen will be increased from time-and-a-quarter to time-and-a-third, thus bringing the arrangements into line with those operating in the outside engineering industry generally. Overtime after the first two hours is already paid for at the rate of time-and-a-half.

The claim from the employees' side of the Railway Shopmen's National Council was that all-day overtime worked on weekdays should be paid for at time-and-a-half throughout.

Busmen's Wages

The National Council for the Omnibus Industry, at its meeting in London on October 30, received the award of the Industrial Disputes Tribunal dated October 20, 1958, dealing with claims of the trade union side for increases in wages and alterations and improvements in working conditions, together with the introduction of a pension scheme.

The Tribunal's award increases by 7s. a week the basic rates of all workers whose wages and conditions are governed by decisions of the National Council, and provides that the rate of payment of skilled maintenance workers on night shift, and semi-skilled workers and cleaners employed on permanent night work shall be increased to time-and-a-quarter. The Tribunal finds, and so awards, that the claim for the introduction of a pension scheme has not been established.

The award takes effect from the beginning of the first full pay period following October 20, 1958. Some 100,000 employees in the provincial bus industry employed by private bus companies and undertakings controlled by the British Transport Commission will benefit.

Contracts and Tenders

Rolling stock for South African Railways & Harbours

South African Railways & Harbours has placed an order with Dorman Long (Africa) Limited for the supply of 3,000 open drop-side steel wagons and 1,000 short drop-side steel wagons at a cost of £3,574,000. Delivery of the short wagons is to commence next April, and of the other type next June.

Leyland Motors Limited has received an order from British United Traction Limited for 20 230 h.p. type "RE901" horizontal diesel engines for incorporation in 10 parcels vans being built by Gloucester Railway Carriage & Wagon Co. Ltd. for British Railways. The value of the engines is some £86,000.

The Sudan Railways has placed an order with Norbottens Järnverk, Lulea, Sweden, for 11,000 *tonnes* of steel rails. Delivery is to be completed before the end of the year.

South African Railways has placed an order with the Dunlop Rubber Co. Ltd., Durban, for 61,000 neoprene synthetic rubber pads for precast concrete sleepers.

British Railways, North Eastern Region, has placed the following contracts:—

Jones & Shipman Limited: universal grinding machine, Darlington Faverdale Works

Standard Telephones & Cables Limited: Control panels at Tollerton and Pilmoor, East Coast main line

G. P. Dennis Limited: three medium voltage switchboards, Faverdale Wagon Works

Scottish Machine Tool Corporation Limited: guillotine shearing machine, Walker Gate Works.

The Special Register Information Service, Export Services Branch, Board of Trade, has received calls for tenders as follow:—

From South Africa:

300 axlebox casings, 11 in. × 5½ in., type "K" 6 to S.A.R. drawing No. C.M.E. 68/01019-330.

The issuing Authority is the Stores Department, South African Railways. Bids, in sealed envelopes, endorsed "Tender No. K.3339: Axlebox Casings," should be addressed to the Chief Stores Superintendent, P.O. Box 8617, Johannesburg. The closing date is November 19, 1958. Local representation is essential. The Board of Trade reference is ESB/26511/58.

From India:

The supply, erection, testing, and setting to work and maintenance for six months of manual retarding, with automatic setting of point, equipment, or automatic retarding with automatic point setting by electronic or other means, from a point in a control tower with all ancillary equipment.

The issuing authority and address to which bids should be sent is the General Manager, Eastern Railway, 17, Netaji Subhas Road, Calcutta 1. The closing date is February 16, 1959. The Board of Trade reference is ESB/26779/58.

From Lebanon:

3 diesel-electric locomotives, 600 h.p., standard gauge, and spare parts

99 two-axle covered freight wagons, standard gauge, 20-ton capacity, 64 with air brake only, and 35 with air and hand brake, also spare parts for wagons

25 four-axle flat wagons, standard gauge, 15 with air brake only and 10 with air and hand brake, also spare parts for flat wagons

25 two-axle flat wagons, standard gauge, 10 with air brake only and 15 with air and hand brake, also spare parts for flat wagons.

The issuing authority and address to which bids should be sent is the Head of Development Department for Hydraulic & Electricity, Ministry of Public Works & Communications, Beirut, Lebanon. This purchase will be financed by the International Co-operation Administration (I.C.A.), the agency through which the United States Government gives economic and technical assistance to other countries. The tender No. is 18. The closing date is December 17, 1958. The Board of Trade reference is ESB/26578/58/I.C.A.

From Korea:

34 items of plant and machinery, including four 24-in. gauge diesel locomotives, eight four-cylinder two-stroke diesel engines, and one overhead travelling crane.

The issuing authority and address to which bids should be sent is the Office of Supply, Government of the Republic of Korea, Seoul, Korea. The tender No. is 377-M. This purchase will be financed by the International Co-operation Administration (I.C.A.), the agency through which the United States Government gives economic and technical assistance to other countries. The closing date is November 12, 1958. The Board of Trade reference is ESB/25612/58/I.C.A.

1,800 angle bars, rail open hearth, punched, carbon steel, for 75 lb. ASCE rail.

3,600 track bolts, rolled threads, heat treated, carbon steel, complete with carbon steel square nuts, ⅞ in. dia. x 4¼ in. long with oval neck and round head.

3,600 coil spring washers for use with ⅞ in. rolled thread track bolts.

16,000 sleeper plates, high carbon steel.

35,000 rail spikes, high carbon steel, ⅝ in. x 6 in.

The issuing authority and address to which bids should be sent is the Office of Supply, Government of the Republic of Korea, Seoul, Korea. This purchase will be financed by the International Co-operation Administration (I.C.A.), the agency through which the United States Government gives economic and technical assistance to other countries. The tender No. is 358-R. The closing date is November 21, 1958. The Board of Trade reference is ESB/26765/58/I.C.A.

From Sudan:

500 rolled steel tyres for locomotive tender wheels.

The issuing authority is the Controller of Stores, Sudan Railways, Atbara. The tender No. is 1836. The closing date is November 20, 1958. The Board of Trade reference is ESB/26891/58.

25 benzine tank wagons

11 fuel oil tank wagons.

The issuing authority is the Controller of Stores, Sudan Railways, Atbara. The tender No. is 1838. Prices must be quoted on both f.o.b. and c.i.f. Port Sudan basis and tenders must be valid for one month from the closing date. The closing date is December 10, 1958. The Board of Trade reference is ESB/26893/58.

Further details regarding the above tenders, together with photo-copies of tender documents, can be obtained from the Branch (Lacon House, Theobalds Road, W.C.1).

The Special Register Information Service, Export Services Branch, Board of Trade, reports that the closing date of the call for tenders from Portuguese East Africa for 61 items of locomotive spares, recorded on page 261 of our August 29 issue, has been postponed to November 28, 1958.

Notes and News

New Container Ship for Harwich-Antwerp Service.—The m.v. *Colchester*, sister ship to the *Isle of Ely*, will sail on the Harwich-Antwerp service and not on the Harwich-Rotterdam service, as previously announced.

West Wycombe Station Closed.—The passenger train service was withdrawn from West Wycombe (Bucks.), Western Region, from November 3 and the station closed. It had been served by trains from and to both Marylebone and Paddington. Road services operate between West Wycombe and High Wycombe and Princes Risborough.

Travel with L.T.E. Cheap Tickets.—London Transport Executive has stated that over 2,600,000 passengers travelled by Underground and bus cheap tickets during the past year. Cheap evening return tickets to town by Underground, used by 1,900,000 passengers, were the most popular facility. Bus "Rover" tickets were used by 440,000 passengers and bus excursions by over 60,000.

Opposition to L.T.E. Underground Train Service Reductions.—The Transport Users' Consultative Committee for London last week stated that it would recommend that London Transport Executive withdraw completely the proposals to curtail the duration of the daily on the Underground, in view of "the very serious repercussions which they would have upon the industrial and social life of London as a capital city." The proposals were referred to in our September 26 issue.

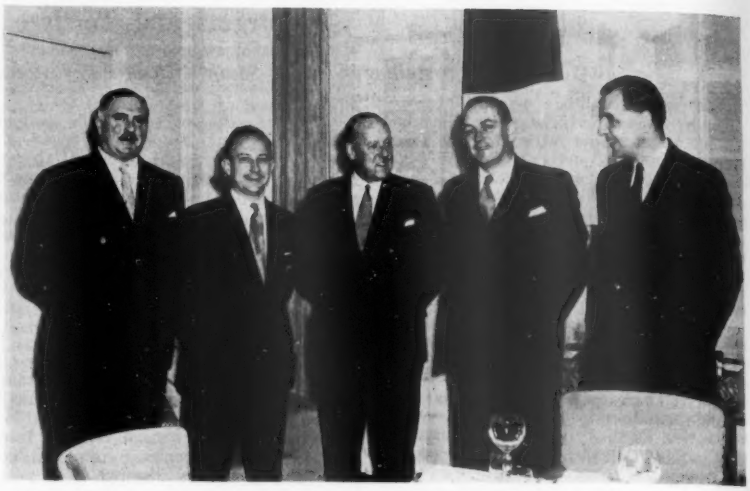
B.T.C. Film Wins First Prize in Brussels Film Week.—The British Transport Commission film, "Journey into Spring," has been awarded first prize as the best tourist film at the 8th International Tourist Film Week, held in Brussels. The prize is a reproduction of Le Maitre de Flemalle's "Nativity." The film was designed to stimulate travel. It reveals the natural beauty of southern England as exemplified by the Hampshire village of Selborne, home of the Reverend Gilbert White, country parson and naturalist. It was produced by Ian Ferguson and directed by Ralph Keene, and was made by the Commission's own film unit, under Edgar

Anstey. Earlier this year, the same film received the British Film Academy award for the best documentary film of 1957, British or foreign.

A.B.T.A. Convention, 1959.—The next annual convention of the Association of British Travel Agents will be held at Harrogate on October 24-28, 1959.

The Setback to Railway Freight Traffic.—The volume of goods traffic conveyed by British Railways during the 12 weeks to September 7 was 48,153,000, and not 48,159,000, as printed in error on page 534 of last week's issue.

Irish Ambassador Entertained at Paddington.—The Chairman of the Fishguard & Rosslare Railways & Harbours Company, Mr. K. W. C. Grand, was the host of the Ambassador to the United Kingdom for the Republic of Ireland, Mr. Hugh McCann, at luncheon at Paddington Station on October 31. The accompanying illustration shows (left to right) Mr. C. J. Rider, Public Relations Officer, British Railways, Western Region; Dr. D. O'Sullivan, Agricultural Attaché; Mr. K. W. C. Grand; the Irish Ambassador; and Mr. Terence J. Sheehy, General Manager (Great Britain), Irish Tourist Board.



At Paddington on October 31, when Mr. K. W. C. Grand, as Chairman of the Fishguard & Rosslare Railways & Harbours Company, entertained the Irish Ambassador to luncheon

Minister of Transport & Civil Aviation as Guest of Western Area Board Chairman.—Mr. R. F. Hanks, Chairman of the Western Area Board, British Transport Commission, entertained Mr. Harold Watkinson, Minister of Transport & Civil Aviation at an informal luncheon at the Great Western Royal Hotel, Paddington, on November 3. The illustration below shows, left to right: Messrs. M. G. R. Smith, Chief Civil Engineer; J. R. Hammond, Assistant to General Manager (Modernisation); A. C. B. Pickford, Assistant General Manager (Traffic); J. W. J. Webb, Regional Accountant; R. G. Henbest, Estate & Rating Surveyor; K. W. C. Grand, General Manager; H. G. Bowles, Assistant General Manager; C. J. Rider, Public Relations & Publicity Officer; Harold Watkinson; A. W. J. Dymond, Supplies & Contracts Manager; R. F. Hanks; S. G. Ward, Regional Establishment & Staff Officer (behind Mr. Hanks); R. A. Smeddle, Chief Mechanical & Electrical Engineer; Dr. C. T. Newnham, Regional Medical Officer; and Mr. A. W. Woodbridge, Signal Engineer.

Mr. Harold Watkinson with Mr. R. F. Hanks and Officers of British Railways, Western Region, after an informal luncheon at the Great Western Royal Hotel

British Travel & Holidays Association Award to B.T.C.—Reference was made on pages 529 and 554 of our October 31 issue to the certificate of commendation awarded by the British Travel & Holidays Association to the British Transport Commission for the most enterprising work done in the field of tourism in 1958. The developments in the Commission's services which earned the commendation were:

British Railways: "Freedom of Scotland" railway ticket; battery railcar service, Aberdeen-Ballater; network of Anglo-Scottish car-sleeper services; Gatwick Airport Station and connecting train services; and "day-line" diesel tickets.

British Transport Hotels & Catering Services: Cardiff General Station, new Gower Restaurant and Red Dragon bar and buffet; Inverness Station, new refreshment rooms; and miniature buffets in British Railways trains.

Crompton Parkinson Limited Results.—The group profit of Crompton Parkinson Limited for the year ended June 30, 1958, was £2,687,577 (£2,543,504). The net profit increased from £1,059,247 to £1,112,429. The final dividend is 7 per cent, making a total of 12 per cent on the capital increased by a one-for-two scrip issue (against an equivalent of 10½ per cent).

Closing of M.G.N. Line.—The East Midland and East Anglia Area Transport Users' Consultative Committees have completed their hearings of the application by British Railways, Eastern Region, to close almost the whole of the Midland & Great Northern Line. The next stage in procedure is the hearing by the Central Transport Consultative Committee for Great Britain.

Bridge Reconstruction in the L.M. Region.—An 84-ft. long steel and concrete bridge weighing 350 tons carrying the slow line from Liverpool to Manchester Exchange London Midland Region, British Railways, over Hampson Street, near Ordsall Lane Station, Salford, was successfully rolled into position on 19th October by the Butterley Co. Ltd. of Ripley, near Derby. The steelwork, which was fabricated by the Butterley Co. Ltd., had previously been erected on the temporary rowing-in trestles.

Gloucester Railway Carriage & Wagon Co. Ltd. Meeting.—General Sir William Morgan, Chairman, Gloucester Railway Carriage & Wagon Co. Ltd., stated at the annual general meeting of the company on October 31 that the group profit of £493,686 was a record in the company's long history of nearly 10 years, and reflected a substantial increase in group turnover. Looking ahead, he said that he was increasingly concious of the necessity

to maintain balanced output if the company was to compete successfully in overseas markets. Competition in these markets had grown in severity during the past year, and was now fierce.

Chester Road Goods Depot to Close.—The goods depot at Chester Road, between Birmingham and Lichfield, London Midland Region, British Railways, will be closed from November 17, 1958. Alternative arrangements will be made for the consignment of merchandise traffic, and coal class traffic will be dealt with as instructed by sender. The passenger facilities at Chester Road Station will remain unchanged.

Staveley Coal & Iron Co. Ltd. Results.—Group profits of the Staveley Coal & Iron Co. Ltd. declined from £1,598,754 to £1,405,234 in the year ended June 30, 1958. The ordinary dividend has been reduced from 14½ per cent to 10 per cent, with a final payment of 7 per cent against 10½ per cent in the previous year. The net profit attributable to the holding company was down from £817,978 to £649,436.

Reduced London-Manchester First Class Return Fares on Saturdays.—The difference between first and second class return fares on Saturdays between Euston or St. Pancras and Manchester London Road or Central has been reduced to 7s. 8d. The first class return ticket costs £3 9s., available by any train on Saturdays only and for return the same day or on the following Saturday. This facility operates until April 25, except on December 20 and 27 and March 28. The ordinary return fares are £4 12s. first and £3 1s. 4d. second class.

Western Area Board Chairman's Inspection Tour of S. & D. Line. The photograph reproduced below was taken at Temple Meads Station, Bristol, on October 29, at the conclusion of a tour of inspection of former Somerset & Dorset Joint Line stations in the Bristol Division by the Chairman of the Western Area Board, B.T.C., and the General Manager and Officers of the Western Region. It shows Mr. C. W. Powell, Operating Officer; Mr. C. J. Rider, Public Relations & Publicity Officer; Mr. J. R. Hammond, Assistant to General Manager (Modernisation); Mr. R. F. Hanks, Chairman, Western Area Board; Mr. L. Edwards, Divisional Traffic Manager, Bristol; Mr. C. R. Rust, Stationmaster; Mr. H. E. A. White, Running & Maintenance Officer; and Mr. K. W. C. Grand, General Manager.

Summons Served on Motorman of Train Involved in Collision.—The motorman of the electric train which collided with an empty steam hauled train at Maze Hill Station, Greenwich, Southern Region, British Railways, on July 4, has been served with a summons alleging that he endangered the safety of persons being conveyed on the railway. The case will be heard at Greenwich on November 12.

North Eastern Region Publicity.—The new poster of Scarborough, shown in the accompanying illustration, which is now being displayed at British Railways stations throughout the country was produced by the Public Relations & Publicity Officer, North Eastern Region, British Railways. The poster was designed by Mr. G. Davies of Commart Limited, Bexley Heath, and printed by Jordison & Co. Ltd., Middlesbrough, in ten colours by lithography.

Building of L.M. Region Road Motor Repair Depot in Liverpool.—Work has begun on the building of a maintenance depot for British Railways, London Midland Region, road motor fleet in Liverpool. The depot will be able to carry out heavy repairs, painting, and body overhauls, which hitherto have had to be done in Blackburn, and will also enable one of the present six depots in Liverpool to be closed, and another to be used as a garage. The other four depots will be relieved of heavy inspection which they are not fitted adequately to carry out. Some 530 vehicles and 1,300 trailers will be maintained at the new depot at Huskisson and it will also handle heavy body repairs and painting of 218 vehicles and 160 trailers operating in North Wales.

Debenture Loan for Milan Underground.—The Milan Underground Railway Company (Metropolitana Milanese) floated a debenture loan in the second fortnight of October for Lire 8,000,000,000 (£4,587,150), redeemable in 20 years and bearing 6 per cent interest. The loan, the proceeds of which are intended for financing the work of building the first line, was taken over by a consortium of banks and was entirely subscribed within four hr.

At Bristol Temple Meads after inspection of stations on the former Somerset & Dorset Joint line now transferred to the Western Region

Poster produced by the Public Relations & Publicity Officer, N.E. Region

Forthcoming Meetings

November 8 (*Sat.*).—Stephenson Locomotive Society, North Western Area, at Manchester Geographical Society, St. Mary's Parsonage, Deansgate, Manchester, at 6.15 p.m. Paper on "Hunting for railways. A writer in search of material," by Mr. J. I. C. Boyd.

November 10 (*Mon.*).—Historical Model Railway Society, at the Railway Tavern, Liverpool Street, London, E.C.3, at 7 p.m. Paper on "The Caldon Low Tramways," by Dr. J. R. Hollick.

November 10 (*Mon.*).—Railway Correspondence & Travel Society, Northampton Branch, at the Liberal Club, Castilian Street, Northampton, at 7.30 p.m. Paper on "The end of an era—the rise and fall of the narrow gauge in the British Isles and Eire," illustrated, by Mr. P. B. Whitehouse.

November 11 (*Tue.*).—Institute of Transport, at the Connaught Rooms, Great Queen Street, London, W.C.2, at 12.30 for 1 p.m. Anniversary luncheon.

November 12 (*Wed.*).—Institution of Locomotive Engineers, at the Institution of Mechanical Engineers, 1, Birdcage Walk, London, S.W.1, at 5.30 p.m. Paper on "Developments in the design of diesel locomotives," by Mr. B. W. Anwell.

November 12 (*Wed.*).—Royal Society of Arts, at John Adam Street, Adelphi, London, W.C.2, at 2.30 p.m. Paper on "Modernising the railways—motive power and operation," illustrated by lantern slides, by Mr. Cecil J. Allen.

November 13 (*Thu.*).—British Railways, London Midland Region Lecture & Debating Society, in the Clerical Staff Dining Club, Cardington Street, Euston, at 5.45 p.m. "That the

quality of transport service is more important to the earning of revenue than the matter of price," a debate with the Railway Students' Association.

November 12 (*Thu.*).—British Railways, Western Region, London, Lecture & Debating Society, in the Headquarters Staff Dining Club, Bishop's Bridge Road, Paddington, W.2, at 5.45 p.m. Paper on "Transport problems in East Africa," illustrated, by Sir Arthur Kirby, Commissioner for East Africa.

November 13 (*Thu.*).—Institution of Railway Signal Engineers, York Section, at the Signalling School, Toft Green, York, at 5.30 p.m. Paper on "Automatic operation of marshalling yards," by Mr. W. H. Ellis.

November 13 (*Thu.*).—Railway Correspondence & Travel Society, Bristol & District Branch, at the Grosvenor Hotel, Bristol, 1, at 7.15 p.m. Paper on "Transport treasures," by Mr. J. H. Scholes, Curator of Historical Relics, B.T.C.

November 13 (*Thu.*).—Railway Students' Association, at Euston, at 5.45 p.m. Joint meeting with British Railways, London Midland Region, Lecture & Debating Society.

November 13 (*Thu.*).—The Stephenson Locomotive Society, London & Southern Area, at Caxton Hall, Westminster, London, S.W.1, at 6.45 p.m. Paper on "The Lancashire, Derbyshire & East Coast Railway," by Mr. Stewart Dewsbery.

November 14 (*Fri.*).—Railway Correspondence & Travel Society, London Branch, at the Railway Clearing House, Eversholt Street, London, N.W.1, at 7.15 p.m. Paper on "Travels on the R.E.N.F.E.," by Messrs. J. Moreley and D. Trevor Rowe.

November 15 (*Sat.*).—Railway Correspondence & Travel Society, North Eastern Branch, at the Mechanics Institute, Skinnergate, Darlington, at 6 p.m. Paper on "North Eastern Railway odds and ends," by Mr. K. Hoole.

November 15 (*Sat.*).—British Railways, Southern Region, Lecture & Debating Society. Visit to Sheffield and Penniстone, returning from Doncaster.

November 15 (*Sat.*).—Stephenson Locomotive Society, North Eastern Area, at the Griffin Hotel, Bear Lane, Leeds, 1, at 6.30 p.m. Paper on "Rail travel in colour," illustrated by colour slides, by Mr. J. B. C. McCann.

November 17 (*Mon.*).—Institute of Transport, at Jarvis Hall, 66, Portland Place, London, W.1, at 5.45 p.m. Paper on "Transportation by pipeline," by Mr. A. Clifford Hartley, Consultant to Messrs. Rendel, Palmer & Tritton; formerly Chief Engineer, Anglo Iranian Oil Co. Ltd. (now British Petroleum Co. Ltd.).

November 17 (*Mon.*).—Railway Correspondence & Travel Society, Merseyside Branch, at the Woodside Hotel, Birkenhead, at 7.30 p.m. Paper on "The Cambrian Railway," by Messrs. D. R. Smith and J. F. Oxley.

November 18 (*Tue.*).—Railway Correspondence & Travel Society, West Midlands Branch, at 64, Holyhead Road, Coventry, at 7.15 p.m. Mr. W. A. Camwell will present "Cine shots throughout the British Isles, 1958."

November 19 (*Wed.*).—Permanent Way Institution, London Section, at the headquarters of the British Transport Commission, 222, Marylebone Road, London, N.W.1, at 6.30 p.m. Paper (illustrated) on "Level crossings," by Mr. E. G. Brentnall.

November 20 (*Thu.*).—South Wales & Monmouthshire Railways & Docks Lecture & Debating Society, Swansea Section, at the Board Room of the Docks Manager's Office, Adelaide Street, Swansea, at 6.45 p.m. Film of the mining and refinery operation of the International Nickel Company of Canada Limited, and the Mond Nickel Co. Ltd., with introductory talk by Mr. T. S. Charleson, Refinery Manager, The Mond Nickel Co. Ltd., Clydach.

November 20 (*Thu.*).—Institution of Railway Signal Engineers, London Section, at the Institution of Electrical Engineers, Savoy Place, London, W.C.2, at 6 p.m. Paper on "Prefabrication applied to railway signalling installation," by Mr. W. A. Hardman.

November 20 (*Thu.*).—Diesel Engineers' & Users' Association, at the Memorial Building, The Institute of Marine Engineers, 76, Mark Lane, E.C.3, at 2.30 p.m. Paper on "Notes on the jerk system of fuel injection," by Messrs. W. A. and G. R. Green.

November 21 (*Fri.*).—R.O.D. Officers' Reunion Dinner at the Transportation Club, 44, Wilton Crescent, London, S.W.1, at 6.30 for 7 p.m.

November 22 (*Sat.*).—Railway Correspondence & Travel Society, South of England Branch, at the C.B.B. Employees' Club, Palmerston Road, Bournemouth, at 6.30 p.m. Paper on "The development of the carriage," by Mr. R. Broughton.

November 23 (*Sun.*).—Railway Correspondence & Travel Society. Annual reunion at the Queen's Hotel, Birmingham, at 2.15 to 7 p.m. Principal speaker Mr. D. S. M. Barrie, Assistant Secretary-General, British Transport Commission.

Railway Stock Market

Stock markets resumed an upward trend, as the abolition of hire purchase controls showed that the Chancellor of the Exchequer, Mr. Heathcoat Amory, is determined to increase production and give industrialists the help of a buoyant market at home so as to provide a stimulus to export trade. It is now being suggested that purchase tax may be reduced in the near future. Meanwhile conditions in export markets are still more competitive, though there are growing expectations that world trade will expand next year. It is this hope which has been the basis of the strong upward movement in stock markets in recent months. The moderate rally in British Funds this week has been attributed to revived talk of a coming cut in bank rate to 4 per cent.

Foreign rails have been less active, and Antofagasta ordinary stock lost a point at 17½, though the preference stock was fractionally better at 37. Mexican Central "A" bearer debentures held steady at 74, and United of Havana second income stock was firmer at 6¼, though elsewhere, San Paulo Railway 3s. units eased slightly from 2s. 1½d. to 2s. 0¾d.

Canadian Pacifics at $53¾ were the same as a week ago, the 4 per cent preference stock strengthened slightly to 56 and the 4 per cent debentures improved from 66¾ to 67¾. White Pass shares moved up from $14¼ to $15¼.

Costa Rica ordinary stock was 16 and the 6½ per cent first debentures 75½. Chilean Northern 5¼ per cent first debentures were 49¼. Paraguay Central prior debentures were 11 and Guayaquil & Quito assented bonds 76½.

West of India Portuguese capital stock changed hands at 77 and the 5 per cent debentures at 68. Barsi ordinary stock was quoted at 24. In other directions, business in Nyasaland Railways shares ranged up to 13s. 3d.: the 3½ per cent debentures were 65½.

Shares of locomotive builders and engineers moved slightly lower as compared with a week ago, but the rather lower priced tended to bring in buyers in the belief that the railway modernisation plan will be speeded up next year. Beyer Peacock 5s. shares eased 3d. to 8s. 7½d., Charles Roberts 5s. shares were maintained at 10s. 3d. while Wagon Repairs 5s. shares were 10s. 4½d., and Gloucester Wagon 10s. shares rose sharply to 17s. Westinghouse Brake held steady at 41s. 9d., Birmingham Wagon have been firm at 20s. 6d. and North British Locomotive steady at 12s. 9d. G. D. Peters remained firmly held and quoted at 25s. 7½d. In other directions, Birmid Industries receded to 69s. in the absence of a higher dividend, but B.S.A. were good at 36s. 6d. and Guest Keen firm at 54s. Mather & Platt firmed up to 49s. and Tube Investments, after an earlier decline, rallied to 73s.

B.I. Cables have improved up to 49s. and after earlier small declines, Associated Electrical rose to 55s. 9d., English Electric to 57s. 9d. and General Electric to 37s. 9d. Crompton Parkinson 5s. shares reflected profit-taking despite the higher dividend, and came back 9d. to 12s. 3d. Blaw Knox 5s. shares rallied to 26s. 6d., and British Aluminium to 54s. 3d., while Vickers have been firm at 32s. 10½d., also Cammell Laird 5s. shares at 8s. 6d. Acrow 5s. shares rallied to 43s. on further consideration of the statements at the annual meeting, and buyers were about for Ransomes & Maries 5s. shares around 15s. 3d.

Pressed Steel 5s. shares have been firm at 2s. 1½d. and the 10s. shares of the Dowty Group strengthened to 41s. 6d. Ruston & Hornsby were 23s. 9d., T. W. Ward 87s., and Worthington Simpson 10s. shares rose sharply to 42s. 9d. British Timken were good at 59s. and John Brown rallied strongly to 31s. 3d., the 6½ per cent yield attracting buyers. Babcock & Wilcox improved to 52s. 3d

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